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and all sections of the drug, pharmaceutical, fine chemical, cosmetic, and allied industries

Official organ of the Pharmaceutical Society of Ireland and of the Pharmaceutical Society of Northern Ireland



CONFERENCE ISSUE CONTENTS

Business Changes	232					
Coming Events	261					
Commercial Television	262	0 . 0 .				22
Company News	232	Opening Session				23:
Contemporary Themes	259	-				22
Correspondence	234	Chairman's Address				236
Deaths	233	Conference Lecture				239
Leaders	243 232	Cometence Lecture	• • •	• • •	• • •	233
Legal Reports London B.Pharm, Suc-	232	Conference Week Items				24
000000	230		• • •	• • •	• • •	47
Marriages	233	First Professional Session				245
Medical Research Council	200			• • •	• • •	
Report	258	Pictured People and Events				246
New Books	244	-				
New Companies	259	Banquet				250
News of the Week	229	-				25
New Products	234	Academic Reception				25.
Patents	261	Science Sessions				250
Personalities	232	Science Sessions	• • •			252
Prescribers' Press Prescription Poser	262 234	History of the Conference 1	003 04			255
Taminal Dagastians	231	Thistory of the Conference i	303 - 04	• • •	• • •	23.
Trade Marks	261					
Trade Notes	233	Index to Advertisers, p. 4. (Classified .	Advertiser	nents, p.	55
Trade Report	260					
Wills	262					

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RIBENA-TWIN AUTUMN SALES BOOST









Volume 186

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SEPTEMBER 10, 1966

No. 4517

Quinine and Quinidine Tablets NO PAYMENT CONCESSION BY THE MINISTRY

WORLD shortage of quinine has resulted in wide variations in the prices charged by the four firms (The British Drug Houses, Ltd., Arthur H. Cox & Co., Ltd., Evans Medical, Ltd., and T. Kerfoot & Co., Ltd.) from whose prices for quinine and quinindine tablets are calculated the basic prices in Part Va of the Drug Tariff. For that reason the Central N.H.S. (Chemist Contractors) Committee made representations to the Ministry of Health in June, and again in July, that those tablets (tab. quinine bisulph 300 mgm., tab. quinine sulph. 300 mgm., and tab. quinidine sulph. 200 mgm.) should be deleted from the Tariff. The Ministry has refused to accept the Committee's representations.

Current Tariff prices for those tablets (for the pricing of August prescriptions) are calculated from the following prices for 100 tablets:—

that a chemist buying from the cheapest source will enjoy a greater cash advantage than previously, and it follows that this

	Drug Tariff	British Drug Houses, Ltd.	A. H. Cox & Co., Ltd.	Evans Medical Ltd.	T. Kerfoot & Co., Ltd.	
quinine bisulph. 300 mgm quinine sulph. 300 mgm quinidine sulph. 200 mgm	47s. 11d.	59s. 0d. 57s. 0d. 72s 6d.	45s. 3d. 42s. 5d. 56s. 4d.	57s. 9d.	51s. 0d. 51s. 0d. 71s. 0d.	

A Ministry letter dated August 24 reads as follows:—

It is regretted that a reply to your letter of July 27 could not be sent before this, because of the need to consider the effect of the Prices and Incomes Standstill. In view of the terms of the White Paper ... the arrangements operative at July 20, 1966, are required to be continued during the period of the standstill unless it can be demonstrated that an adjustment is merited for reasons such as are described in paragraphs 4 and 5 of the White Paper. We have given careful consideration to your Committee's suggestion that certain quinine preparations should be deleted from Part V of the Drug Tariff — by which, we understand, it is intended to suggest that the prices should be omitted and chemists should be reimbursed the invoiced price, as proposed in your earlier letter of June 7. This proposal is, however, unacceptable to the Department on two counts: (1) the loss of the "notional adjustment" or, alternatively, the added complexity in applying the appropriate adjustment factors to individual prescriprices and (2) the abandonment of the principle that chemists should be encouraged to buy from the cheapest suitable source. Of course, the difference between the Drug Tariff basic prices and prices paid by individual chemists are heightened by the price increases which have occurred, and the chemist who buys his supplies from the dearest source will be at a greater disadvantage than he was in the past. It is equally true, however,

should serve as a greater incentive to the individual chemist, and make it more worth while, for him to change his source of supply. This kind of situation, in which chemists are expected to take the rough with the smooth, is of course bound to exist so long as the present pricing arrangements for standard preparations continue.

British Association

ANNUAL MEETING IN NOTTINGHAM

A BIRTH control "pill" for pigs should soon be on sale to farmers,

said Dr. Christopher Polge (principal scientific officer of the Agricultural Research Council Animal Research Laboratory, Cambridge. Dr. Polge, who was addressing the agriculture section of the British Association for the Advancement of Science at Nottingham, on September 5, said that the drug, developed by Imperial Chemical Industrics, Ltd., during the search for a new contraceptive pill for women, was in powder form for pigs. He described trials as 'most successful.' A pinch of the powder added to sows' daily feed would delay their normal mating time. When the powder was stopped, the sows could be mated and produce litters to a timetable. The powder, still known only by its code name, ICI 33-826, is being evaluated by the Dunlop committee on drug safety. When marketed it should cost farmers less than one shilling a sow a month.

Addressing the physiology section on "Drugs and the Heart" Professor Eleanor Zaimis (head of the pharmacology department, Royal Free Hospital, London), claimed that some drugs can harm the heart, although they may heal other parts of the body or the mind. The long term use of tranquilisers might have been responsible for the deaths of patients in an American neuropsychiatric hospital. Some patients unexpectedly died and degenerative changes in the heart muscles, unlike any others previously known, were finally diagnosed as the cause of death. She asked for the affect on the heart muscles of any drug given to



CONFERENCE CHAIRMAN LEADS IN THE DISTINGUISHED GUESTS AT THE BANQUET: Professor and Mrs. Shotton with the Lord Mayor of Manchester (Alderman Nellie Beer) the Duke of Devonshire and others.

patients over an extended period to be investigated. 'No time spent by the scientist and the clinician in exploring the obverse of the coin is ever wasted.

Drug Tariff

QUARTERLY REVISION OF PRICES

A QUARTERLY list of revised prices to the Drug Tariff (England and Wales), contains cumulative amendments to Parts V, VI, VII and IX. A reminder is given that from October 1 the following sizes or packs of dressings are being deleted:— India rubber bandages $2\frac{1}{2}$ in. by 1 yd.; $2\frac{1}{2}$ in. by $2\frac{1}{2}$ yd.; cotton wool; B.P.C., 2 oz. and 8 oz.; hospital quality 2 oz. and 8 oz.; absorbent lint, B.P.C., 2 oz. and 8 oz.; boric gold lint 2 oz. and 8 oz.; absorbent lint 2 oz. and 8 oz.; boric acid lint 2 oz and 8 oz. A new specification is given for vaccination pads which should be supplied from September 1. Changes in the Scottish Tariff were published last week (p. 198).

Liver Fluke

HIGHER INCIDENCE FORECAST

ABOVE-average incidence of liverfluke disease is forecast by the Ministry of Health for the coming season, Present indications being for slightly

less disease than in 1965 but rather more than in 1963. Black disease is also expected to be above average prevalence in Wales and North West England. Liver fluke disease is likely to be most prevalent in South west England, parts of Wales and North west England; and of a higher incidence in South-east England than in 1965. The fluke season is expected to start earlier in the year and to constant earlier in the year and the year and year. tinue throughout the winter. Without adequate control measures losses could be expected to commence in September and reach a peak in late December and early January 1968. Losses from black disease are also likely to start in September. The Minister pointed out that, though the 1966 summer has been less wet than that of 1965 there has been no sustained period of fine weather, apart from one good spell in mid-July, to dry out flukey areas and limit the development of the fluke and its snail host. There was a carry-over of fluke infection in the snail from the 1965 season and that has been producing a limited infection on the herbage since early summer. Inadequate treatment of stock, particularly cattle, at the end of 1965 has caused a high contamination of pastures with

fluke eggs, and the wet spring and early summer favoured multiplication of the snail.

Drug Addiction

NEED TO EDUCATE DOCTORS

PRESSURE should be brought on the Royal Commission on Medical Education to introduce more general teaching on the subject of drug addiction, said Professor F. Camps (professor of forensic medicine, University of London) in an address to the annual summer school of the Central Council for Health Education, on August 10, restant II. ported in *The Guardian* of August 11. Professor Camps believed that responsibility for ensuring the proper use of drugs must lie with doctors, but thought few general practitioners knew how to deal with a case of drug addiction. The medical profession was said to be anxious to retain its freedom to prescribe drugs and to avoid the kind of prohibitions and law-enforcement problems that tended to lead to racketeering in narcotics, but, said Pro-fessor Camps, it must now face the fact that the permissive approach was leading to increasing consumption of harmful drugs, especially hallucinogens.

LONDON B.PHARM. SUCCESSES

THE following were successful in the 1965 B.Pharm. examination of the University of London. Degrees were awarded on August 1.

Internal Students

(Students attended the School of Pharmacy, University of London, unless otherwise indicated)

First-class honours. BEDWANI, J. R. PUGH, W. J. THOMPSON, Aileen M. WATTS, Judith A.

Second-class honours (upper division)

ADCOCK, J. W. BOGUSH, David BOULD, Cynthia M., Chelsea BURCHELL, J. J., Chelsea COWAN, D. A., Chelsea CRITCHLEY, Vivien J., Chelsea Davies, Barbara J. DAVIES, John DAVIS, H. B., Chelsea Davis, Janet S. DESHMUKH, A. A. DOWNER, Angela M. EDWARDS, Clive ELSON, B. M., Chelsea GOODCHID, Margaret A.
JONES, Diane, Chelsea
KHANBHAI, B. Y.
MATHENGE, A. I., Chelsea
MILLMORE, D. J. V., Chelsea
MORGAN, Gaynor M., Chelsea NASH-STEER, John, Chelsea PRINCE, Catharine H. RAYMOND, Kenneth, Chelsea SOLOMONS, R. S. STONE, Pamela J. Tay, Belinda B.-L. TURNER, B. J., Chelsea WATSON, C. J. Chelsea WILSON, G. H., Chelsea YATES, D. B., Chelsea

Second-class honours (lower division)

ABRAHAMS, Ian, Chelsea ASTILL, T. P., Chelsea Bishop, J. W.

Box, Lawrence, Chelsea BOX, Lawrence, Chelsea CLARK, P. N. COPELAND, P. M., Chelsea DEEKS, P. A. DOLDEN, Sheila R., Chelsea DOVE, W. F., Chelsea ESPLEY, Elizabeth A. FENNER, M. J., Chelsea FENNER, M. J., Chelsea FLYNN, C. H. A., Chelsea FORBES, Hannah R. FORTIN, ROMA E., Chelsea GOODES, MONICA C., Chelsea KNAPTON, GERALDINE J., Chelsea LEE, J. S. N. LEVERTON, DOTOTHY A, LEVY, Norma S., Chelsea LINFORD, D. J., Chelsea
LINFORD, D. J., Chelsea
LYNE, Susan J., Chelsea
MANLEY, D. G., Chelsea
MARSH, Stephanie D., Chelsea
MORGAN, Diana J., Chelsea PAYNE, J. D., Chelsea PEAD, Diane L., Chelsea ROBERTSON, M. I. Rowles, Marilyn **J**. RUBINSTEIN, Stephen SAWYER, K. J. SHATTOCK, P. E. G. Soll, Malcolm STEVENSON, D. R. STOKES, Pamela M., Chelsea Tauber, David, Chelsea WARREN, P. R. WHEATON, D. C. WHITESIDE, Marian L. Wolfe, R. S. L., Chelsea Wood, B. J., Chelsea

ALLIN, Diana E., Chelsea ALTMAN, Brian, Chelsea BLACKBURN, I. D. BRUCE, Susan J. Collier, Shirley M., Chelsea

DAVID, J. A., Chelsea DAVID, J. A., Chelsea GRIFFITHS, Lindsay A. KNEEBONE, D. A., Chelsea KNIGHTLEY, Christine S., Chelsea LERWILL, Leonorah M., Chelsea MILLER, D. F. OSEI, Z. N., Chelsea STANLEY, Diana L., Chelsea WRIGHT, T. N., Chelsea WYBRANIEC, Zofia H., Chelsea

External Students

Second-class honours (upper division) FRENCH, Judith D., Sunderland FURMAN, B. L., Bradford HARSTON, S. J., Bristol HART, Albert, Sunderland PEMBERTON, M. E., London PICKFORD, G. G., Brighton SOWERBY, Jacqueline A.,

Sunderland TIMSON, R. M., Sunderland Second-class honours (lower division)

ACKETTS, Barbara J., Brighton ACKETTS, Battara J., Bright ATKINSON, D. C., Bradford BENSON, R. K., Sunderland BERRY, M. I., Sunderland BOND, C. C., Sunderland BROOKS, J. R., Bristol BUSH, D. R., Sunderland CLARKE, C. D., Brighton
COVILLE, P. F., Brighton
CROWTHER, Jan, Bradford
CUMBERLAND, R. J., Leicester FARWELL, J. A., Bristol FREEMAN, Jean, Bradford FUNG, Kai-Yue, Bradford GRAY, Joan M., Sunderland HAWKINS, Barbara H., Sunderland HORSFIELD, Stella M., London and Liverpool

JONES, B. J., Brighton JONES, D. B., Leicester KILLICK, P. G., Brighton MARSHALL, A. S., Bristol MICHAELS, H. R., Brighton MURGATROYD, G. D. Brighton ORRISS, Margaret, Bradford OWEN, D. A. A., Brighton PASHLEY, S. G. H., Bradford PATEL, D. B., Sunderland PATEL, K. A. J., Bradford PENDLEBURY, T. G., Bradford PLEUVRY, A. F., Brighton REES, Judith A., Bradford RICHARDS, I. S., Leicester

RICHARDSON, Margaret G., Sunderland

SHAH, K. P., Sunderland SMITH, Frank, Sunderland SMITH, J. M., Leicester SMITH, P. M., London

and Liverpool SMURTHWAITE, Barbara, Sunderland Tervet, Anne J., Bradford Turner, M. A., Bradford Vyas, R. M., Sunderland Waigh, R. D., Bristol WALKER, Melvyn, Bradford WILSON, Ian, Sunderland WOOD, H. C. J., Bradford

Pass: ---

Andrews, B. M., Leicester and Sunderland

Sund Beckett, Joy O. F., Bristol Benoy, Christine J., Bristol Bone, Peter, Sunderland Budgen, C. J., Brighton Close, R. L., Leicester Cutler, R. H., Sunderland Goodman, Philip, Brighton Goodwin, J. S., Bradford Green, Fileen A. Leicester GREEN, Eileen A., Leicester GREEN, R. A., Leicester HOGAN, J. E., Leicester LALANI, N. J., Sunderland LAND, G. M., Bradford LIM, Eng Tin, Sunderland MCINTYRE, J. C. W., Sunderland MIDCALF, Brian, Bradford PATCHICK, J. I., Brighton PLAYLE, A. C., Brighton ROBERTS, Sally C., Sunderland SIMMONS, R. A., Leicester SIMMS, L. R., Leicester SIMTH, Alan, Sunderland SOLANKE, A. O., Sunderland TAN, Boon Leong, Leicester TIPLER, Patricia A., Brighton Watts, Rosemary J., Brighton Willis, J. C., Brighton

IRISH BREVITIES

PRESCRIPTIONS dispensed in Northern Ireland during May numbered 786,157 (518,275 forms). Total cost was £480,930, an average of 146.82d. per prescription.

NEWS IN BRIEF

"ADMINISTRATIVE Practice of Hospital Boards in Scotland," a report of a committee of the Scottish Health Services Council, has been published by H.M. Stationery Office (price 8s.).

Pensioners of the workers' pension fund of Imperial Chemical Industries, Ltd., are being told that their increases in pensions due to start on October 3 have had to be deferred for six months because of the Government's prices and incomes standstill ruling.

THE British Pavilion (30,000 sq. ft. in area) at the International Trade Fair in Bangkok, November 17 to December 10, will contain exhibits and displays from thirty-nine manufacturers; over 200 are taking space at strategic points in other parts of the fairground.

A REVISED edition (pp. 16) of the careers pamphlet "The Retail Trade and You" published by the Retail Trades Educational Council, 56 Russell Square, London, W.C.1 (price 1s. 3d.) reviews educational courses in branches of the retail trade and includes mention of the correspondence course on photographic salesmanship by the Photographic Dealers' Association.

THE Sheffield coroner, at an inquest on August 26 urged the Committee on Drug Safety to consider the use of darkened glass with white writing for ampoules containing dangerous drugs. The coroner (Dr. Herbert Pilling) was holding an inquest on a two-day-old baby, who had died after being injected by mistake with the drug Scoline at Sheffield City general hospital. The verdict was "accidental death."

OVERSEAS NEWS

RHODESIA

Bilharzia Research Laboratory

A £25,000 bilharzia research unit donated by De Beers Consolidated Mines, Ltd., to mark Rhodesia's 75th anniversary has been opened at Chiredzi. The laboratory was ceremonially handed over recently to the Rhodesian Minister of Health (Mr. I. F. MacLean) by the company's chairman (Mr. H. F. Oppenheimer).

ARGENTINA

Poisons in Fodder and Water

IN port quarantine in Buenos Aires recently fourteen valuable animals are reported to have died from an unidentified poison contaminating their fodder. The Buenos Aires newspaper La Prensa urges that poisons used in agriculture should be more carefully labelled: the "skull and crossbones" might help. The Buenos Aires Herald reported about the same time that ninety-six students at an agricultural school were given urgent treatment in hospital after drinking water contaminated with pesticides. All recovered.

TOPICAL REFLECTIONS

By Xrayser

The Art of Dispensing

In recent years, pharmacy has been much concerned with the current phenomena of "public relations" and the projection of "images." It has been thought that some subtle process of publicity, never clearly defined, would enhance the status and the prestige of the pharmacist in the public mind. He would stand revealed in the long run as the fine fellow he is-or ought to be. At the same time the more realistic among pharmacists have clearly appreciated the basic truth that a solid reputation can only be built on personal service, uprightness and integrity, and that a pharmacist, like other men, is judged on his personal performance. The standard of pharmacy as a profession, and its standing with the public, lies in the hands of its practitioners. So many factors are involved that one cannot possibly enumerate them all. A few, however, are fundamental. The environment should be in keeping with the traditions of an ancient calling; the personal approach should be dignified; the products of the dispensing department should be beyond criticism and reproach. In the distant past, when I entered the portals of pharmacy in the very subordinate rôle of junior apprentice, I was fortunate enough to come by a copy of the "Art of Dispensing"—and dispensing was and remains an art. One of its chapters stated (though perhaps not in these words) that he who economised in drugs was a rogue, whilst he who saved money on labels and corks was a fool, for the appearance of the final product was the criterion by which he would be publicly judged. There followed some extremely fine specimens of hand-written labels of a neatness and clarity that constituted a challenge to the newcomer. All of that came to mind when I looked at the illustrations of "How not to Label" on p. 201. No public relations campaign or programme for the propagation and projection of pharmaceutical prestige -in short, as Mr. Micawber might have said, "images"-could hope to make progress in face of such a handicap as is displayed there. I am distressed—my forebears would have had apoplexy.

To Name or Not to Name

The arguments for and against the naming of dispensed medicines continue unabated. Your contributor "Hospital Pharmacist" examined the position at length last week (p. 208); a correspondent deplored the stand, described as old-fashioned, taken by the Pharmaceutical Society in the matter (p. 206) and on p. 228 there is a quotation from a letter to the British Medical Journal suggesting that, because tablets are anonymous, some patients who have separate lots of tablets prescribed may be tempted to transfer them all to one container. I must confess I have difficulty in following the logic of the last-mentioned argument. I have known the reprehensible practice to be followed even when each drug was clearly named. But the argument is not one of naming or not naming, or secrecy or mystique; it is, as it always has been, one of expressed wishes. The most important argument for retaining the traditional practice is that it is well established. Because of its roots in history—and they go back a long way -complete reversal is undesirable and unwise. The physician knows that all he has to do is to ask for identification if he wants it, and two letters of the alphabet will suffice. They are understood by both physician and pharmacist, though I am compelled to admit that the examples of labelling mentioned in my first paragraph have lessened my convictions. Nevertheless I am opposed to complete reversal of established usage, and I propose to devote my last paragraph to a little story that has no bearing whatsoever on pharmacy.

Confusion

Two batsmen made their way to the wicket one sunny day. One had a clever idea. "We must upset the field," he told his partner. "When I call 'No,' run as fast as you can. When I call 'Yes,' stay where you are. That will cause confusion." It did, and there was a run-out in the first over of the day. There is much to be said for leaving things as they are.

LEGAL REPORTS

Took Employer's £635

AT Halifax on August 24, Francis Reddington, boiler fireman, of no fixed address, admitted stealing £635 from his employers, Taylors Drug Co., Ltd., Halifax, and was sent in custody for sentence at the next quarter sessions. Prosecution said that Reddington disappeared on June 26 after having been given the money to pay into the bank. He was not seen again until August 23, when he walked into Halifax police station and told a detective he had spent all the money. He had seen the World Cup and been to Weymouth, the Isle of Man, Dublin and Jersey. Reddington returned a £15 cheque to the company by registered post with a note saying 'hoping this meets with your approval.'

COMPANY NEWS

Previous year's figures in parentheses

THERMOS, LTD.—Mr. J. Philip Bailey, A.M.I.Mech.E., has been appointed to the board as director of manufacturing

SANDOZ, LTD., Basle, Switzerland.—The Sandoz group reported sales 15·5 per cent. up in the first half of the year at 696·2 m. Swiss francs (against 602·7 m. in the same period of 1965). Pharmaceutical sales were up 17·2 per cent. at 350·0 m. francs. The upward trend is reported to have continued in the first part of the second half.

MONSANTO CO., St. Louis, U.S.A.

MONSANTO CO., St. Louis, U.S.A.—Capital expenditure this year will total about \$210 m. down from an original estimate of \$250 m. and sharply below the record \$295 in 1965. The decrease is due to an "inability to get deliveries and to get the work done, not because of a change in programme or direction," according to the com-

ASHE CHEMICAL, LTD.—An increase from £94,000 to £111,000 is reported in first half group profits, before tax, compared with the first six months of 1965. Provided trading follows the usual pattern the board anticipates a rise in the total profit for 1966 owing to seasonal factors profits for the second half normally exceed those for the first and benefits will also arise this year from acquisitions. An interim of 12 per cent. (against 9.6 per cent., equivalent) is declared.

TWO of France's mineral water producers are to be merged. La Compagnie Fermière de Vichy is to pass under the control of its biggest competitor, the Perrier-Contrexeville group. Previously the Vichy company was controlled by Brasseries et Glacieries d'Indochine in which Perrier had a minority interest. The Perrier group is to surrender its share in B.G.I. to the other main share-holders, Financière de Suez and Banque de L'Indochine, and will in return receive B.G.I.'s majority holding in the Vichy company.

CHAS. PFIZER & CO., INC.— Dealings in the company's Common shares, introduced in the London Stock Exchange on August 30 (see C. & D., September 3, p. 200), reflected the Wall Street price. Closing at \$113-\$116 per share that would give a return of

around 2 per cent. if the last dividend is repeated. Mr. P. V. Colebrook (chairman and managing director of the group in the United Kingdom), told a Press conference in London on August 31 that annual turnover of the U.K. group was around £17m. while total assets were £14m.

BERK, LTD.—Sales in the first half of 1966 rose to £8.65m. (from £7.25m. in the same 1965 period) but pre-tax profits fell from £493,800 to £276,300. The directors state that increasing costs have cut margins to a "serious" extent. Under present conditions it is "frequently impossible" to make equivalent economies, they point out. A downward movement in the world mercury price had been foreseen by the directors and all possible steps taken to minimise the effect. But the extent of the fall proved unprecedented and involved trading losses, they tell members. Profits should accrue from business in the second half of 1966 from the current rising prices of mercury. Other factors which have adversely affected profits were the launching costs of Berk (Retail), Ltd. and disruption with increased costs, of the export business due to the shipping strike. The 1966 results include profits of Berk Spencer Acids, Ltd. attributable to the group from October 1, 1965. After a virtually halved tax charge and providing for £71,100 minority interests this time (£8,700 credit previously) the group net balance for the first six months to July 4 was £102,500 (£298,500).

BUSINESS CHANGES

GIBSONS, LTD., Medical Hall, have transferred to 8 College Street, Belfast (from 55 Donegall Place).

INDUSTRIAL Market Research, Ltd., have removed to 17 Buckingham Gate, London, S.W.1.

CARLO ERBA (U.K.), LTD., are transferring to Halco House, 28 Great Peter Street, London, S.W.1 (telephone: 01-799 2876), on September 15.

THORNBERS (CHEMISTS), LTD. and Globe Drug Co. Ltd., have moved to new offices and warehouse at Limbrick House, 11 Bold Street, Blackburn, Lancs.

MR. & MRS. W. A. HALL, Ms.P.S., are taking over the pharmacy of Andrews (Chemists), Ltd., 39 Norfolk Street, King's Lynn, Norfolk, on November 1.

THE two largest organisers in Britain of overseas trade fairs are to merge their activities. The two companies involved are Industrial and Trade Fairs Holdings, Ltd. and British Overseas Fairs, Ltd.

THE businesses of Macdonald & Son, Ltd. and Macdonald & Taylor, Ltd., Ashton-under-Lyne, Lancs, have been amalgamated. From September 2 they are being carried on as one business under the name of Macdonald & Taylor, Ltd. There is no change in the ownership, control or management of the business. However, in view of their long standing connection with pharmacy, it is their intention to continue trading with chemists as Macdonald & Son

Appointments

UNITED CHEMISTS ASSOCIATION, LTD., Cheltenham, Glos, have appointed Mr. E. Davies their representative for South Wales.

AEROSOL RESEARCH & DEV-ELOPMENT, LTD., Farlington, Portsmouth, have appointed Mr. Ian G. Marris their works manager.

BRONCO, LTD., have appointed Mr. J. Sweetland district manager of their re-formed Anglia district. Mr. D. Hyde has been appointed western district manager.

PERSONALITIES

MR. BRINLEY R. H. THOMAS, M.P.S., retired on August 12 after twenty-nine year's service with United Chemists Association, Ltd. Mr. Thomas was a representative in North-west England until seven years ago when he transferred to the South Wales territory.

DR. F. S. DAINTON (Vice-chancellor of Nottingham University) has been appointed chairman of the advisory committee for scientific and technical information of the Ministry of Education and Science. He succeeds Sir James Cook, at present Vice-chancellor of Exeter University and Vice-chancellor designate of the University of East Africa.

MR. DECLAN HICKEY, The Square, Skibbereen, co. Cork, Eire, was the hero of an exciting rescue recently when he dived in the river Lee at Lavitt's Quay, Cork, and took to safety a young man who had got into difficultiees. The man had fallen into the water and a passer-by, who had gone to his assistance, was being drawn under when Mr. Hickey arrived at the scene. The three were later treated in hospital and discharged. Mr. Hickey, who qualified in 1961 was appointed manager of the Carlow branch in May Roberts (Ireland), Ltd., recently. He is son of Mr. Pierce Hickey who carries on the family pharmacy in Skibereen where Mr. Hickey, a strong swimmer, was on holiday.

DR. NORTHAGE J. de V. MATHER, this year's Conference lecturer (see p. 239) comes of a long DR. line of clerics and doctors. Two of his ancestors sailed with the Pilgrim Fathers to found the New England Mathers. The Rev. Increase Mather was principal of Harvard. His son, the Rev. Cotton Mather, was associated with Yale. Both were Puritans. Cotton Mather was involved in the notorious Salem witch trials (Dr. Mather refers to witches in his lecture). His own place of birth was the village of Todmorden, which lies on the Lancashire/Yorkshire border, and the family house was partly in one county and partly in the other. Although his parents were loyal Lancastrians. Dr. Mather was born a Yorkshireman at the back of the house. He graduated from Oxford and returned to Manchester for his clinical studies. He is today a consultant psychiatrist to the Manchester Regional Hospital Board and a lecturer in psychiatry at the University. He also holds

an appointment with an approved school. Dr. Mather takes a great interest in criminology. Though he has no appointment with the Home Office, he has attended around 140 murder trials. Music has always occupied the greater part of his leisure time. He has a fine tenor voice, is president of an orchestra and plays at least four instruments (the trumpet, piano, violin and French horn), the last-named being his favourite.

MARRIAGES

ARAM—IRESON. — At Menston parish church, nr. Otley, Yorks, on September 3, Charles Peter Aram, M.P.S., elder son of Mr. G. Aram, M.P.S., Cliff Pharmacy, Wellingore, Lincoln, to Catherine Ann Ireson, Burley Lane, Menston.

CLOWES—VOSS. — At All Saints Church, Maldon, Essex, David Clowes, B.Sc., A.C.G.I., to Ruth-Mary Voss, B.Sc., one of the directors of Voss Instruments Ltd., Faraday Works, Maldon. The bridegroom is a specialist in telecommunications and computers.

DEATHS

ASHBY.—At Leicester Royal Infirmary, recently, as the result of an accident, Mr. Ralph Ashby, M.P.S., 11 Pevensey Avenue, Evington, Leicester, aged twenty-four. Mr. Ashby, who qualified in 1963, died from burns sustained while he was laying floor tiles in the kitchen of his new home. His wife, who also qualified as a pharmacist at the same technical college (Leicester), sustained burned hands while trying to rescue her husband. At

A 30-gm. Pack.—Glaxo Laboratories, Ltd., Greenford, Middlesex, announce that Betnovate-C cream and ointment are now available in 30 gm. (additional to the 15 gm.) packs.

Product Changes. — Goya, Ltd., 161 New Bond Street, London, W.1, are now issuing their perfumed talcs in a sleek new, lightweight container in "pretty pastel colours." The talcs are

available in Timeless, Frenzy and No. 5 fragrances.

Arrangements for Distribution. — Distribution of Optrose rose-hip syrup to chemists continues to be handled by Keldon, Ltd., Perivale, Middlesex. A. Wander Ltd., 42 Upper Grosvenor Street, London, W.1, have been appointed distributors of Optrose to outlets in the food trade.

Change of Distributor.—Denver Laboratories, Ltd., 12 Carlisle Road, London N.W.9, announce that, since September 1, their product Ketotest has been distributed solely through Agrico, Ltd., 36 Botolph Lane, London, E.C.3, who hold adequate stocks and to whom inquiries should be sent.

Formula Change.— International Laboratories, Ltd., 205 Hook Road, Chessington, Surrey, give notice of a forthcoming change in the formula of Crampex tablets: the quinine sulphate, of which there is a world shortage, is being omitted. The new pack, clearly marked "New Formula," contains eighteen tablets. Price is unchanged.

the inquest a verdict of "Death by misadventure" was returned.

BURTON.—At his home in Upper Norwood, London, S.E.19, on September 1, Professor Harold Burton, professor of chemistry, Queen Elizabeth College, University of London, aged sixty-five. From 1921 to 1924 Professor Burton was a chemist with Burroughs Wellcome & Co. From 1949 to 1955 he was honorary secretary to the Chemical Society.

CLARK.—On August 22, Mr. Hedley James Clark, M.P.S., 8 Dorbett Drive, Liverpool, 23. Mr. Clark qualified in 1913.

CUMMING.—On August 18, Mr. John Cumming, M.P.S., 200 Manor Way, Crewe, Ches. Mr. Cumming qualified in 1958.

FORSYTH.—On August 5, Mr. John William Forsyth, M.P.S., 154 London Road, Peterborough, Northants. Mr. Forsyth qualified in 1920.

HIGGINBOTHAM.—On August 11, Mr. Frank Higginbotham, M.P.S., 11 Pinfold Street, Macclesfield, Ches. Mr. Higginbotham qualified in 1935.

JONES.—On August 13, Mr. David Charles Jones, 2 Gilkes Crescent, London, S.E.21. Mr. Jones qualified as a chemist and druggist in 1900 and retired in 1958.

KING.—Recently, Mr. William King, M.P.S., 16 Grayson Road, Spennymoor, co. Durham. Mr. King qualified in 1930.

MITCHELL.—Recently, Mr. Alexander McKenzie Mitchell, M.P.S., 8 Ashgrove Road, Aberdeen. Mr. Mitchell qualified in 1922.

TRADE NOTES

Tax Absorbed on Certain Products.— The Bayer Products Co., Winthrop House, Surbiton, Surrey, point out that their name was incorrectly included in a list of companies making no increases in prices of products as a result of the 10 per cent. surcharge on purchase tax. There were, in fact, only four Bayer products subject to purchase tax for which no increase in retail price was recommended (Bayer aspirin 25 and 100, Fergon, 50 and Lenium sachet).

New Formula, New Distributors.—Gordon-Moore, Ltd., St. Swithin's, Norwich Norfolk, have taken over Cranbux, Ltd. (British subsidiary of Lingner-Werke, Düsseldorf, West Germany), the distribution in Great Britain of Odol mouthwash. Manufacture of the product is described as a two-country affair, the antiseptic base being prepared in Düsseldorf and then shipped to Norwich, where the remaining ingredients are added. Simultaneously Messrs. Gordon-Moore are distributing the Continental pack of Odol tooth-paste in both sizes.

Bonus Offers

KELDON, LTD., Perivale, Greenford, Middlesex. Optrose rose-hip syrup. 3s, per doz. off trade price of treble-size bottles ordered with minimum 2 doz. standard ("threepence off") and 1 doz. double ("1s. off") sizes.

WARDLE.—On July 6, Mr. Thomas Henry Wardle, M.P.S., 142 Littleover Lane, Derby. Mr. Wardle qualified in 1909.

WHITE. On August 19, Mr. Christopher Arnold White, M.P.S., 339 New Bedford Road, Luton, Beds. Mr. White qualified in 1920.

WOOD.—Recently, Mr. Frederick William Wood, M.P.S., 10 East Parade, York, aged 76. Mr. Wood qualified in 1911 and was the founder and a director of F. W. Wood & Son (York), Ltd.

WOOLDRIDGE.—Suddenly on August 31 Dr. Walter Reginald Wooldridge, C.B.E., scientific director to the Animal Health Trust. Dr. Wooldridge founded the Trust in 1942 and became its scientific director in the following year. The Trust has research centres for the investigation of veterinary disease. Dr. Wooldridge was a former president of the Royal College of Veterinary Surgeons and of the British Veterinary Association. He qualified as an honours graduate in chemistry of the University of London in 1922 and M.R.C.V.S. in 1922. In 1929 he obtained a Ph.D. for work on bacterial enzymes and then became a lecturer in biochemistry at the London School of Hygiene and Tropical Medicine. In 1952 he became a member of the Senate of London University and he was a governor of Birkbeck College. He was also a mem-ber of the British Veterinary Codex Committee.

WOOLLONS.—On August 11, Mrs. Lucy Johnson Woollons, M.P.S., 104 Pixmore Way, Letchworth, Herts. Mrs. Woollons qualified in 1907.

HILL'S PHARMACEUTICALS, LTD., Spring Bank Works, Nelson, Lancs. Hill's balsam products and Hill's sore throat lozenges. 5 per cent discount on 6 doz. assorted items; 10 per cent. on 12 doz. assorted items. Until January 31. Hill's sore throat lozenges. fourteen invoiced as twelve.

SMITH & NEPHEW PHARMACEUTICALS,

SMITH & NEPHEW PHARMACEUTICALS, LTD., Welwyn Garden City, Herts. Calyptol inhalant capsules (rosette of twelve). Fifteen invoiced as twelve, plus purchase tax, on minimum order of 1 doz.

TRADE SHOWS

BELFAST, Grand Central hotel, September 12-16. H. BRONNLEY & CO., LTD. Kensington hotel, September 12. SCOTT & BOWNE, LTD. CARDIFF, Queen's hotel, September 12-15. GOYA, LTD.

STOKÉ-ON-TRENT, North Stafford hotel, September 12. DREAMLAND ELECTRICAL APPLI-ANCES LTD.

MANCHESTER, Piccadilly hotel, September 13. DREAMLAND ELECTRICAL APPLIANCES, LTD. NEWCASTLE UPON TYNE, Royal Station hotel, September 15. DREAMLAND ELECTRICAL APPLIANCES, LTD.

A Caption Corrected. — A shrink-wrappered pack illustrated last week was of Supersoft shampoo and not as erroneously stated in the caption.

INFORMATION WANTED

The Editor would appreciate information about: Chlorsal ointment Kenricks rejuvenating tablets Tyrell's JBL cascade enema

NEW PRODUCTS AND PACKS

PHARMACEUTICAL SPECIALITIES

Tablets of Prothionamide.-Pharmaceutical Specialities (May & Baker), Ltd., Dagenham, Essex, have launched a new speciality Trevintix (prothionamide) tablets. Trevintix is indicated in the treatment of all forms of tuberculosis in which the patient's organisms are resistant to two or more of the standard drugs, and especially where ethionamide is unacceptable because of poor gastric tolerance. Trevintix is claimed at least as active as ethionamide and to have much better gastric tolerance. It should always be administered in association with at least one other anti-tuberculosis drug to which the patient's organisms are sensitive. Reference should be made to the manufacturer's literature for special precautions to be taken in using the drug. Each white press-coated tablet with yellow inner contains 125 mgm. of prothionamide. Dosage for adults is of the order of 500 to 1,000 mgm. orally daily, either as a single dose or in two equal parts. Dosage for children is based initially on 10 mgm. per kilo of bodyweight, gradually increasing over a period of fifteen days to 20 mgm./kilo. Packs are containers of 100 and 500 tablets and 2 gm. of powder.

OVER-THE-COUNTER MEDICINALS

Geriatric Capsules.—A West German speciality K.H.3 capsules, manufactured by Komm. Ges. W. Schwarzhaupt, Cologne, Germany, is available from the sole United Kingdom agents Inter-Alia Pharmaceutical Services, Ltd., 1 Kempton Road, London, E.6. Each capsule contains 50 mgm. of procaine hydrochloride and 0.2 mgm. of haematoporphyrine base. The container holds thirty, to be taken one daily. The agents invite inquiries from chemists.

VETERINARY SPECIALITIES

Multidose Drenching Gun.—As a sales aid for use with their Thibenzole cattle and sheep worm drench, the agricultural division of Merck Sharp & Dohme, Ltd., Hoddesdon, Herts, have introduced a low-cost easy-to-operate multidose drenching gun. The



gun, the Thibenzole Autodrencher, is a one piece free-standing unit without backpack, harnesses or feed tubes and weighing just over 3 lb. when fully loaded. It is light and durable and has a comfortable trigger grip that avoids hand fatigue, and is fitted with a nickel-plated brass dosing nozzle. The Autodrencher is designed for use with the 720-c.c. cartridge of Thibenzole Autodrench liquid (sufficient for 180 lambs (ninety with nematodirus disease), ninety hoggs or sixty adult sheep).

Poultry Vaccination Simplified.—An important step towards simplifying poultry vaccination is claimed by the agricultural division of Pfizer, Ltd., Sandwich, Kent, who have established a half-mil dosage regime for each of their five inactivated poultry vaccines including Endevac B combined Newcastle-disease/infectious-bronchitis vaccine and a new inactivated triple vaccine, the Endevac BT, for "3-in-1" immunisation against Newcastle disease, infectious bronchitis and epidemic tremor. Cost benefits to farmers using the new triple vaccine are understood to come through reduced handling of birds and fewer injections (potential breeding birds require vaccination on only three occasions). Endevac BT is packed in 250-mil (500-dose) plastic sachets as well as in 50-mil (100-dose) polypropylene bottles.

COSMETICS AND TOILETRIES

"Revolutionary" Nail Coating.—Max Factor Hollywood and London (Sales), Ltd., 16 Old Bond Street, London, W.1, have launched a nail coating, Stronghold, claimed to mend broken nails, support and strengthen, and protect against breaking and splitting, "all with the stroke of a brush." The product works "from the outside" to create a protective network on the nails. It contains no penetrating ingredients that might harm either the nails or the surrounding skin. In use it is applied thinly over a split or torn nail, its invisible fibres forming a strong coating that enables the broken top of a nail, it is stated, to be filed to shape while the nail itself is growing out smoothly and invisibly under the nail polish. The round bottle is topped by the familiar nail-polish cap that holds the brush for easy application. The carton has a novel wing-piece with the printed story; inside is an illustrated instruction leaflet. The transparent window identifies the product and reveals that there are no added "application gadgets."

SUNDRIES

Disposable Syringes. — Steriseal, Ltd., Redditch, Worcester, who claim to have been pioneers in the field of sterile disposables, have launched a new range of sterile syringes and needles. The new Steriseal disposable syringes are now made from Lustran -A. S.A.N. copolymer, a product that is claimed non-toxic, non-pyrogenic, and without reaction on surgical spirit or any medicament in normal use. Another feature is that the syringe may, within normal injection time, be used with paraldehyde, Myodil, Neo-hydriol, etc. The syringes have transparent barrels with black graduations and grey plungers. A new "peel-open" pack is claimed

to give quick identification and easy access without risk of contamination. Steriscal needles now have siliconised blades to ensure maximum ease of penetration, and a specially developed front set point for minimal trauma. The nylon hub is claimed inert to all usual drugs with resistance to a wide range of solvents, and a new windowed pack allows instant identification. All Steriscal syringes except the 1-mil are easily and speedily adapted for use as sealed sterile containers by simply levering off the plastic part of the piston and scaling with the blind hub. The syringes are available in 1-, 2-, 5-, 10-, or 20-mil sizes, naked or with needle attached; the needles are available in a full range of standard sizes from 25G x $\frac{5}{8}$ in. to 19G x 2 in.

CORRESPONDENCE

Class Distinction

SIR,—Our copy of the C. & D.... was received this [Tuesday] morning. The postmark on your wrapper clearly shows the posting date as last Thursday. Instead of the wrapper stating "Registered Newspaper First-class Mail," it ought to read "First-class Newspaper Fourth-class Mail."

A. David-Rhodes, Scarborough

Should be Reprinted

S1R,—I find Mr. Phillips' article on the Society's branch system (C. & D. September 3, p. 210) to be not only comprehensive, stimulating and scientific, but also readable. It could well provide a basis for fruitful discussion by branch members (or at least branch committees) and, for this purpose, reprints should be made available (the Society paying for the printing).

"Mugwump-159"

A Limerick "Coming-of-Age"

SIR,—The Limerick Chemists' dinner dance comes of age this year. To celebrate its 21st birthday in fitting style the Committee is actively engaged in planning a most lavish and spectacular function for November 30. Proceeds, as usual, go to the Benevolent Fund of the Pharmaceutical Society of Ireland, which has benefited considerably from it through the years. Tickets, price £2 2s. each, are strictly limited. They may be obtained from P. J. Hogan, M.P.S.I, 45 Upper William Street, Limerick.

M. PENNINGTON, Secretary,
Limerick, Eire

PRESCRIPTION POSER

THE prescription below was presented to a Devon pharmacist, who in sending it to the C. & D. found it necessary to spell out also the name of the prescriber (not shown, but certainly not to be deciphered without local knowledge).

Tabelie Filis Sed 60.

BRITISH PHARMACEUTICAL CONFERENCE, MANCHESTER, 1966

OPENING SESSION

City's Part in Pharmacy's Development

THE 103rd meeting of the British Pharmaceutical Society was opened in the Whitworth Hall of the University of Manchester by the Conference president and president of the Pharmaceuti-cal Society (Mr. J. C. Bloomfield) on Monday morning. Members of the Monday morning. Members of the Conference Executive were on the platform, together with the Lord Mayor of Manchester (Alderman Nellie Beer, O.B.E., J.P.) and the Mayor of Salford (Alderman Frederick Dewhurst, J.P.). THE PRESIDENT welcomed members to the Conference and reminded them that the occasion and reminded them that the occasion was the fourth on which the Conference had visited Manchester. Those attending were conscious that they met within a university renowned as a centre of research and learning and they hoped during the week to catch some of its spirit of adventure in scholarship. They did not forget that Manchester was the first university in Britain to offer a degree in pharmacy (as long ago as 1904) and that in Manchester the first course of lectures in pharmaceutical chemistry had been given in 1824 by no less an authority than John Dalton, the founder of modern chemistry and one of the City's greatest sons.

Science Papers

Mr. Bloomfield asked members to remember that the cardinal principle on which the Conference was founded in 1863 had been to provide a forum for the reading of original scientific research papers. This year the excellent number of thirty-six papers had been accepted for presentation. The scientific rôle of the pharmacist was now an accepted fact, said Mr. Bloomfield, and the Pharmaceutical Society was determined to ensure that through training and qualification the young pharmacist would be able to take his full share of responsibility for providing medical care in Britain.

This was the age of medicines, a subject upon which the man in the

This was the age of medicines, a subject upon which the man in the street frequently regarded himself as an authority and was generous with advice to his friends. Even persons prominent in public life at times made quite irresponsible statements about medicines, their storage and distribution. 'They must be warned that the potent drugs of today, most of them highly complex synthetic chemicals, demand a more discriminating appraisal than they qualified to give.' Medicines required experts to handle them and to advise upon them; and the best qualified to undertake those twin tasks were the pharmacists in general practice. Their years of training and their code of ethics, their knowledge of the law and their experience in detecting illicit trends in public demand all combined to produce

men and women who recognised that public safety was in their hands, and were jealous of their reputation for maintaining that safety.

Mr. Bloomfield welcomed specially to the Conference Dr. T. E. Wallis and Mr. H. Humphreys Jones, who between them had given 117 years of

Mr. Bloomfield welcomed specially to the Conference Dr. T. E. Wallis' and Mr. H. Humphreys Jones, who between them had given 117 years of service to the Conference. He also offered greetings to visitors from overseas, including M. Boris Brus (vice-president of the Belgian Pharmaceutical Association) and Professor Kurt Steiger from Switzerland (secretary and president-elect of the scientific section of the International Pharmaceutical Federation). Professor Steiger had recently been elected an honorary member of the Society. Later in the week the president looked forward to welcoming Sir Eric Scott (president, Federated Pharmaceutical Service Guild of Australia) and officials who were visiting Britain with him. 'Their presence here is evidence of the international character of pharmacy,' he said.

Recalling the motto of the Pharmaceutical Society "Look to your health," Mr. Bloomfield noted with admiration that the Lord Mayor, in her public service, had looked to the health of Manchester's citizens. 'Your distinguished record in many spheres of social welfare, particularly in those related to the well-being of children, is recognised far and wide.'

ALDERMAN NEILIE BEER (Lord Mayor of Manchester), extending to all present a cordial welcome to the city, said that the profession of pharmacy was held in great respect by members of the public, an opinion she shared without reservation. The fact that the Conference meeting was the fourth to be held in Manchester gave her some pleasure. The chairman of the local Conference committee (Mr. H. Steinman) 'whose friendship I value' was the kind of man who did that little bit more for his city as well as for his profession. She would like to pay a special welcome to the 233 ladies attending the Conference, many of whom were joint authors of scientific papers.

Partners in Medicine

The Lord Mayor noted that the professors and research workers were joined at the Conference by retail pharmacits who, from 14,000 pharmacies, dispensed medicine to the nation. They were partners with the medical profession in the constant war against disease. Their presence was proof of their determination to keep abreast of current research. There could be abuses of medicines and all too often carelessness in storage in the home. In the field of health education local authorities could and must play an in-

creasing part. With their specialised knowledge of the use and abuse of drugs, pharmacists were in a unique position to act as advisers and their pharmacies served as centres for the promotion of health.

The Lord Mayor then, in a reference

The Lord Mayor then, in a reference to the controls on the sales of drugs, said that pharmacists' moral responsibilities were great; but their training and conduct were more than adequate to meet the demands placed upon them. She claimed some knowledge of the problems involved from her work on the local executive council.

Later she mentioned that two former

Later she mentioned that two former Lord Mayors of Manchester had been members of the pharmaceutical profession. She hoped that from the Conference there would arise another John Dalton

MR. BLOOMFIELD thanked the Lord Mayor for her welcome and Mayor of Salford for his attendance. After referring to the work of Professor Shotton at the school of pharmacy, University of London, he then handed over the proceedings to him.

PROFESSOR SHOTTON then gave his address (see p. 236).

Proposing a vote of thanks to Professor Shotton for his address, PROFESSOR K. BULLOCK, Manchester, said the address had produced the right atmosphere for a week's enlightened discussions. The chairman was right in emphasising the radical nature of the change that had occurred in pharmaceutics. 'Instead of thinking in terms of solutions, emulsions, ointments and creams, one now thought in terms of monophasic or polyphasic systems. That was no mere change in terminology.' It was indicative of the transition from empiricism to science in pharmaceutical education.

Immediately Applicable

'Do we sometimes hear that Conference papers are too highbrow for the practising pharmacist?' he asked. Professor Shotton's address was immediately applicable to the practice of pharmacy, and if anybody thought it was highbrow he should reflect 'upon our age and whether we are keeping up to date.'

Some had feared that pharmacists might become mere 'counters-out of tablets and ampoules.' Before long such mechanical acts of dispensing might be automated. Was it not possible that a computer might make the requisite entries in the Dangerous Drugs and Poisons registers? The pharmaceutist would then be free to perform his scientific function of formulating, according to underlying physicochemical principles, the materials used as drugs so as to obtain maximum stability and optimal activity of the resultant medicines.

BRITISH PHARMACEUTICAL CONFERENCE, MANCHESTER, 1966

CHAIRMAN'S ADDRESS

Recent Research in Pharmaceutics

OVER the past 100 years the training of the pharmacist was mainly concerned with a number of relatively arbitrary procedures for preparing galenicals and dispensing prescriptions.

The approach was largely empirical and descriptive, and when it became uneconomic to manufacture small quantities of galenicals in pharmacies the activity was transferred more and more to manufacturing houses, particularly as the cost and intricacies of standardisation increased. Apprenticeship instruction became restricted to the art of dispensing prescriptions, the schools of pharmacy undertaking the teaching of empirical methods of galenical preparation.

Empiricism persisted until recently, but the manufacture of prepacked dosage forms has now reduced the "art" in extemporaneous dispensing. Fundamental knowledge of many topics such as emulsification, properties of powders, and even solvent extraction, has been elucidated largely in fields other than pharmacy, particularly by physical chemists and chemical engineers.

Mathematics Neglected

The relatively short academic courses which the pharmacist was expected to pursue in the past precluded teaching in depth of the basic sciences needed, and neglected the mathematics necessary to cope quantitatively with research in those complicated subjects

research in those complicated subjects.

Over approximately the past forty years that situation has been changing. The subject of pharmaceutics has evolved and the applied fields in physical chemistry, physics, microbiology and chemical engineering (itself an applied science) have grown up under the pharmaceutics umbrella. Tribute must be paid to Professor Harry Berry, whose foresight was responsible for the greater attention paid to microbiology and the introduction into pharmacy curricula of pharmaceutical engineering science. The teaching of sterilisation processes, for example, should incorporate microbiological, physicochemical and engineering concepts if the subject is to be covered adequately.

The pharmacist's spec'al contribution is difficult to define, and the cliché that he is "an expert on drugs" has little meaning unless that expertise is defined. Certainly he needs a knowledge of "quality" in terms of minimal requirements for purity, stability, action of drugs, formulation and manufacture to give the desired activity and availability. He must also study the physical properties of the material he uses and the mechanisms of processes.

of processes.

The subject matter is so wide in scope that there is a danger of a college course becoming superficial. We



Professor E. Shotton

are thus faced with a selection of the subject matter and principles considered to be essential to all pharmacists, and those topics, particularly in the final year, that should be taught in depth, to be of lasting value. Arrangements should also be made for some specialisation to satisfy a student's particular interests. The change from a qualitative to a quantitative approach has been common in the history of science but in pharmacy it has been too slow and has not yet gone far enough. Many of the systems and processes are common to many industries but the materials differ, and pharmaceutical standards are comparatively more exacting.

Determining Shelf Life

Considerable attention has been given to the length of time over which a preparation may be kept before, through decomposition, it no longer complies with accepted standards for content of active material. In the past, storage at tropical, temperate and refrigeration temperatures was carried out over extended periods to determine storage life in different environmental conditions. A more economic method of investigation has been evolved by applying the theory of reaction kinetics in order to determine the order and rate constant of the decomposition reaction at a number of temperatures. By choosing a suitable number of accelerating temperatures it is possible to obtain the rate constant by extrapolation to the desired temperature and from that the shelf life may be predicted.

In a paper on the stability of pituitary extracts, Gaddum (1930) summarised his results as a nomogram relating temperature, time and percentage destruction at various pH values. Edwards (1950, 1952) published a kinetic study of the hydrolysis of aspirin. Others developed the method. In particular Higuchi and Busse (1950) compared the rate constants for killing bacteria and for the decomposition of procaine hydrochloride at different temperatures in order to find the most practical sterilising temperature. The method is useful in determining the optimal conditions for stability, such as pH value. Provided the route of decomposition is known, the quantitative effect of stabilising agents may be determined by their effect on the rate constant.

Stabilisation generally implies a useful reduction in the rate of decomposition. At present we appear to be limited to the use of comparatively few reducing agents, anti-oxidants and complexing agents, and to the use of screens against ultra-violet light.

In biopharmaceutics, kinetic measurements have been applied to the absorption and excretion of drugs, allowing different methods of drug presentation to be compared for effectiveness. Such techniques may not give a detailed explanation of the mechanisms involved, but the results provide a criterion for comparing similar commercial preparations.

Physical Stability

Knowledge of the chemical, physical and pharmacological properties of the active materials used is fundamental in pharmacy, and the physical properties of preparations (which should satisfy aesthetic and practical requirements) are also important. Classification of preparations as mixtures, liniments, gargles, ointments, pastes, injections, etc., is useful in indicating whether they are for internal or external use, but it is profitable to use, in addition, a second classification based on the type of system involved, so that properties may be correlated with structures and compositions. Thus we have monophasic systems such as true solutions and polyphasic systems such as emulsions, suspensions (whether liquid or semi-solid), powders and the products made from powders (granules, tablets, etc.) Irrespective of their use or route of administration the systems will have many physical properties in common, and the influence of structure and concentration of the phases present, particle particle interaction, etc., and the rate at which they change, can be studied in preparations exhibiting a whole range of properties.

Monophasic preparations, such as

Monophasic preparations, such as true solutions, are unlikely to change physically provided there is no loss of solvent or chemical change, but it is important, so as to avoid crystallisation, to know the solubility of a

substance at various storage temperatures and in the presence of added

ingredients.

Polyphasic systems can be extremely complex, as with dispersions of a liquid or solid in a continuum that itself varies from liquid to solid. Physical stability is concerned with the separation or concentration of the disperse phase to the top or bottom of the system, coalescence of liquid globules, aggregation of solid particles and crystal growth. Changes in those systems are often reflected in the rheological properties, the measurement of which affords one method of assessing stability and of standardising the preparations.

Attempts have been made to derive expressions to account for the flow properties of concentrated dispersions, but no universal formula has been produced, owing to the difficulties of accounting for flocculation, particle size, shape and size distribution and the presence of substantial interfacial films formed from the suspending and emulsifying agents used.

Mucilaginous Emulsifying Agents

Whether the mucilaginous emulsifying agents, which are particularly useful for internal emulsions, themselves form emulsions that conform with the more recent theories and the types of interfacial film that they form, is a problem that has intrigued me for a number of years. The presence of a substantial interfacial film was observed microscopically by the behaviour of an oil drop in acacia solution under the microscope, surface folding being seen to occur when the size of the drop was reduced.

A film of that kind, firmly attached to an oil droplet, and moving with it would therefore cause an apparent increase in the volume fraction of disperse phase, and the viscosity would be greater than that to be expected from a given emulsion composition. Homogenising an emulsion decreases the mean diameter of the globules, and so increases the interfacial area, with an apparent increase in volume fraction of disperse phase equal to the increase in interfacial area multiplied by the film thickness. The increase in volume may be estimated from the increase in viscosity, the increase in surface area is found by microscopical measurements, and so the film thickness can be estimated. In that way acacia, gelatin, sodium alginate, propylene glycol alginate, methyl cellu-lose and sodium carboxymethyl cellulose have been examined and the results are given in the table (viscosity method). They are comparable with a thickness of 0.3µ obtained by Sherman (1961) for proteins in an ice cream mix and confirm the formation of a substantial multilayer.

The results are based on the assumption that the changes in mean diameter and the particle-size distribution do not in themselves affect viscosity, but that is not strictly so. Where a marked increase in viscosity is found on homogenising an emulsion the stability of the emulsion may be followed by vis-cosity measurements, indicating the coalescence of droplets. The method

COLLOID AND DISPERSE PHASE FILM THICKNESS Viscos- Washitv ing method method* (₁₁) (A°) 0.29 Gelatin pH3, liquid paraffin 0.21 Gelatin pH3, n-heptane Sodium alginate, liquid paraffin alginate, light liquid Sodium paraffin 0.29 Propylene glycol alginate, light liquid paraffin 0.13cellulose Methyl 20. liquid paraffin 0.18

Methyl cellulose 20, benzene

paraffin
Acacia, light liquid paraffin
Acacia, n-heptane

Methyl

cellulose 4500, liquid

The film thickness by the washing method is calculated from the weight of dry residue. In the emulsion the thickness will be considerably increased due to hydration of the colloid.

0.37

0.15

is probably insensitive and may be of practical utility only where the film thickness is appreciable. Microscopical observation indicated that interfacial films from acacia, gelatin and the cellulose derivatives formed solid films, whereas the alginate films were liquid. Wibberley (1962) used an oscillating bob at the interface to show that the films have both a yield value and an elastic component. Further work on the films formed from the other mucilaginous materials may show a gradation in physical properties, allowing an interpretation of their emulsifying properties and of the stability of emulsions formed with them.

The relatively slow formation of the films led to a consideration of the manner of the adsorption. It was found that the films showing some solid properties, such as acacia, gelatin and the cellulose derivatives, could, by repeatedly replacing the aqueous phase by distilled water after centrifuging, be "washed" without complete breakdown of the emulsion. The alginate and potassium laurate stabilised emulsions could not be so treated. By using a volatile oil such as n-heptane, the washed emulsion could be evaporated to dryness and residual emulsifying agent recovered, even though none was detectable in the washings. From surface area measurements of the washed emulsion the thickness of the residual layer was estimated and the results are also given in the table. The emulsifying agent recovered from the emulsion showed no permanent denatura-tion of the kind found with some proteins adsorbed at an interface.

Absorption in Two Stages

One is led to the conclusion that adsorption probably takes place in two stages, the first a monolayer, apparently stable to washing, of the large molecules and the second a multilayer built upon that platform when there is an appreciable concentration of the emulsifying agent in the continuous phase. The systems show that an emulsion may be stabilised by an interfacial film having strong lateral cohesion. With ionised materials like acacia the film will be charged. Materials such as methyl cellulose may exhibit a residual surface charge due to the exposed polar groups, but the magnitude of the charge still requires investigation.

Schulman and Cockbain, in their theory of emulsions, consider that the viscosity of an emulsion is a function of the viscosity of the interfacial film. Preliminary work we have carried out on cetyl alcohol-sodium lauryl sulphate-water systems has shown the system to have a complex structure, and that the viscosity is a property of the system as a whole and not merely of the interfacial film.

Pharmaccutical Processes

The processes used in manufacturing pharmaceuticals are common to many industries, and though much of the work involved may be claimed as the concern of the chemical engineer, many aspects must also interest the pharmacist if he is to formulate products properly and co-operate in the development of processes. It seems unprofitable to try to discriminate strictly between pharmaceutics and chemical engineering, since the chemical engineer and the pharmacist both nced to understand the mechanism of a process.

In powders consisting of a number of solid phases in contact with air, the gas phase can have a marked effect on the properties of the system, particularly when it is given a sufficient upward velocity to fluidise a powder bed. Such conditions facilitate heat and mass transfer processes. Particles may be sprayed with solutions to build up coatings on the particles for a variety of purposes.

Mixing of Powders

The process of mixing powders to attain a random distribution of all the ingredients, and the efficiency of mixing equipment may be examined by the criteria of uniformity of mix and rate of mixing. For pharmaceutical products the former is more important, since powders and products made from them, such as tablets, must conform to close standards in terms of content of active ingredient. Provided the desired uniformity of mix is attained then the rate of mixing becomes important in order to make the operation economic.

Train (1960) suggested on theoretical grounds that the B.P. standards for content of active ingredient in tablets needed revision, as powdering and mixing 20 or more tablets for the mixing 20 or infect tablets for the assay did not necessarily reflect the content of the individual tablet, particularly when the active ingredient was in high dilution. He calculated the number of particles per sample necessary to give a particular percentage variation of the content of active material in different dilutions.

If the tablet weight is specified, the degree of fineness of the powders can also be defined. Unfortunately many of the fine powders needed to fulfil those specifications are not free flowing. Stephenson (1961) considered that the wet granulation process large-ly overcame many of the difficulties for substances soluble in the granulating fluid as the material would then be spread more uniformly over the

inert diluent. In the slugging process the problem of adequate mixing remains.

In devising a realistic standard for the content of active material in a tablet or capsule two variables are involved, namely uniformity of mix and weight of tablet. The variation in the weight of the tablet allowed by the Pharmacopoeia appears to be a satisfactory commercial standard, except for allowing two tablets in twenty to have twice the allowable percentage deviation from the average weight.

The standard for the weights of drugs in tablets is based on the requirement that twenty tablets are used for the assay, and it has been pointed out that it would not show the variation between individual tablets. The estimation of very small quantities may also involve large errors in the assay.

The assay of individual tablets would involve an increase in the cost of production that would need to be justified by determining the variation in dose that can be tolerated medically, and whether the procedure can produce a mixture from which tablets complying with that variation can be made. The uniformity of mix for the powders needs to be established at the granulation stage, and it would seem logical for the weight of the sample to be the compressing weight.

Compression of Powders

Technological research on the compression of powders seems to be directed to (a) the mechanism of the process, including the propagation and decay of forces through a powder mass, with resultant density distribution; (b) the factors affecting the properties of tablets, such as strength, disintegration, recovering of the initial particles, etc.; and (c) comparisons of the effectiveness of substances added to tablets (binders, disintegrating agents, lubricants and diluents and "moisture").

It has been shown that the compression is not uniform through a powder mass owing to the friction developed between the particles of the powder and at the die wall, etc. The overall effects which it has been convenient to examine are, for example, the relationship between the pressure exerted by the moving punch and the stationary one.

Another overall parameter in general use is the relative volume or relative density.

Those overall relationships do not give much information on what is happening in the mass of material. Pharmaceutical tablets are relatively small, but variations result from the different pressures exerted by the moving and stationary punches. The rotary machine has the advantage that both top and bottom punches move and exert approximately the same pressure, the greatest difference existing at the centre rather than between the two ends.

In a mass of powder the areas of contact between particles are small and during compression extremely high pressures (stress concentrations) develop at them. Subsequent movement therefore generates heat and it is possible that momentary high temperatures are generated before the heat is dissipated through the solid mass. Consolidation may thus be affected by fusing of solids of low melting point, followed by solidification; or by an increasing solution in any solvent present, with subsequent crystallisation.

sent, with subsequent crystallisation. The "strength" of a tablet must be related to the strength of the bonds formed. Tests involving shear or tensile strength could be devised, but it was found impracticable to try to define the cross-sectional area of the actual bonded material, especially when there was a measurable porosity. Therefore a crushing test was decided upon.

Examination of the broken surfaces showed that the break occurred either predominantly through the crystals, exhibiting a plane surface, or around the crystals, owing to failure at the crystal-crystal bonds.

Where fracture occurs through the crystals the effect of crystal size is such that the strength of the tablet increases as the crystal size is deminished.

A possible explanation of "capping" is that, after compression, and when the punches have moved apart, the tablet is subjected to pressure by the die wall, so that the stress is mainly radial. Elastic recovery of the material must then be in an axial direction, and if the bond between the crystals is strong compared with the strength of the crystal itself, recovery of an elastic material may result in a planar radial fracture in the compact. If elasticity is high, separation will occur and there will be further separation when the tablet leaves the die.

Entrapped air may aggravate the problem but compression of hexamine under vacuum did not prevent capping in hexamine tablets examined. Hexamine crystals coated with a thin layer of stearic acid or hard paraffin formed

tablets that fractured around the crystals. Capping did not occur and the effect of particle size on the strength of tablets was then negligible. If, on the other hand, aspirin was coated with an adhesive (acacia) a strong bond was formed (probably between the acacia films) and fracture then occurred across the crystals instead of round them, and in those conditions the smaller crystals formed the stronger tablet. It seems that when the bond between the crystals is relatively weak, elastic recovery can take place partially at the expense of those bonds and capping does not occur. Those empirical observations are now being tested.

Parameters to be Measured

Probably a number of parameters could be measured independently, together indicating the most favourable method of treatment to give a desired product — hardness, Young's modulus, particle size, solvent content and perhaps the temperature coefficient of solubility. The effect of the various additives on the properties of the finished tablet will also need to be determined.

I have tried to indicate some of the varied kinds of research in pharmaceutics and naturally the examples I have spoken about are those in which I am particularly interested. Many similar problems need research concerning pharmaceutical materials, processes and principles, and I believe there is a growing interest in these branches of the subject. These topics are complex and will increasingly need advanced mathematical interpretation of the results. It is by research that theory can be built up so as to obtain a proper understanding of the properties of the materials and methods we use. In this way basic knowledge can be accumulated to establish pharmaceutics theory in terms of exact science and so to be of lasting value to students of pharmacy.



A group of members pictured in the grounds of Chetham's College, with Manchester Cathedral in the background.

BRITISH PHARMACEUTICAL CONFERENCE, MANCHESTER, 1966

CONFERENCE LECTURE The Changing Face of Psychiatry

NORMAN J. de V. MATHER, M.B., Ch.B.*

[ABSTRACT]

ILLNESS itself is a matter of the utmost importance, causing as it does much hardship and much distress, and coming to everyone of us in some form or other at certain times of our lives. Emotional and intellectual disturbances, which may or may not be associated with serious physical disorders, are in some ways more serious and more disturbing than the purely physical type of illness, because they cause a change in personal relationships, whether between husband and wife, sister and brother, friend or employer, or society as a whole. It is this disturbance of social relationships which produces a greater disorganisation for the individual and disorganisation for the individual and may result in compulsory admission to

Mental illness has for centuries been considered in a different category to other types of illness. The layman has, over the years, developed a number of prejudices with regard to it. It is only perhaps by having some understanding of the origins of these prejudices that one can cope with the illnesses when

they occur.

Persistent Themes

When we consider the history of mental illness we find certain themes that persist and which have contributed to our present ever-lingering prejudices. In most cases of illness the patient is aware that he is ill, and, thus, he usually seeks advice. There are, however, a number of illnesses, such as chronic syphilitic encephalitis, certain types of cerebral arteriosclerosis, or schizophre-nia or mania, in which the patient may lack insight and deny he is ill, though it is apparent to others that he is afflicted. To society he may appear to be sound in wind and limb and yet altered in his relations with the community. In the distant past this type was not pitied but feared and in the early primitive societies he was considered to be the bearer of a supernatural spirit either for good or evil. These individuals were considered to fall within the province of the religious leader and there was created a dichotomy in illness — one type of illness going to the accepted doctor or medicine man and the other going to the priest. Mental illness thus became the province of the church.

With the advent of Christianity, the mentally ill were thought to be pos-sesed of the devil and the latter, being naturally anti-Christ, was associated with sin. Thus mental illness was equated with sin and, therefore, not respectable and something to be hidden

under a bushel.

For the appreciation of our environment we are very dependent on our special senses and the unthinking in-dividual will only accept as reality



those things he can see, feel, hear, smell or taste. It is understandable that man can appreciate physical disorders more easily than mental illnesses, for the jaundiced complexion and the stertorous breathing are more easily detected than an individual's misery or his difficulty in thinking. Ignorance is a common cause of fear. Today not only are people still afraid of mental illness, but they also deny its existence in them-selves or in their near relatives.

Freedom is something that we value more than almost anything else, and any threat to individual freedom is distasteful and horrifying. It is understandable that when certain illnesses necessitate compulsory admission to hospital, those illnesses are also feared and rejected. Hence, today, man's prejudices based on an unnatural dichotomy of illness in the past, the equation of men-tal illness with sin, and the presence of fear due to both ignorance and possible compulsory measures — are comprehensible and reasonable.

An examination of the attitudes to mental illness in the past centuries is revealing. In the Old Testament we find evidence in many places of the presence

of insanity.

Greek medicine was essentially associated with the gods, as was Greek life as a whole. There was never anything as a whole. There was never anything suggesting a scientific or psychological approach. There was a close association between the pre-Hippocratic physician and the Æsculapian temples in which healing was performed by the priests, and it was left to Hippocrates to introduce a more objective and hence more scientific approach.

Little Progress

During the centuries of the Roman Empire there was little progress in

psychiatry and medicine. There were a few illustrious names in Roman medi- Galen is soon called to mind but the Roman citizen was an easy prey to charlatanism and superstition. Mental illness or lunacy was recognised but it was treated with amulets, charms and rituals. The Roman appreciated that lunacy was an intermittent or episodic condition, and his laws allowed for this in considering the civic re-sponsibility of members of the Roman

Whatever criticism may be directed towards Rome, there is not much to be said in favour of later civilisations when it comes to psychiatry. From the fall of Rome to the Renaissance in the 14th century—that is, during approximately 1000 years—there was little change in the social attitude to the mentally ill. During that time there was a progressive decline from a semi-rational attitude to one of sorcery, witchcraft and medievalism.

During the Dark Ages there was little advance either in medicine or in psychiatry. There were a few enlightened centres, such as in the Benedictine monastery of Monte Cassino where some principles of medicine were studied, but those were exceptional. By the ninth or tenth centuries, psychological problems had become confused and intermingled with theology.

The strict religious views which became established culminating in institutions such as the Inquisition in the 16th century led society to view the insane as something to be feared rather than Torturing sects arose, often known as flagellants, which discharged their emotions and inhibitions upon the mentally ill, and many of these lasted in Europe until the 17th century. The lawgivers at the end of that period were beginning to differentiate between civil and criminal wrongs and though, as from Roman times, the lunatic might be considered not responsible in civil matters, he was still considered criminally responsible and punished for acts resulting from mental illness. It was left to an English itinerant justice, Bracton by name, to introduce the con-cept of mens rea (guilty mind) into legal matters

The tragedy was yet to come, for on the eve of the Renaissance, there appeared in Europe two Dominican brothers Johann Sprenger and Hein-rich Kramer, who were responsible for the stifling, for a considerable time, of an inquiry into mental illness. These two monks were obsessional and methodical Germans who were determined to lead a movement directed towards the obliteration of witches. They received permission from Pope Innocent VIII on

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December 9, 1484, and they produced a treatise which in its own distorted way has become a classic. 'The witches hammer,' or 'Malleus maleficarum' as it was named, is divided into three parts. The first proves the existence of witches, the second describes clinical reports as to their appearance and their activities, and the third is a legal examination as to methods of detecting and sentencing witches.

Great Assiduity

Those two monks attacked their problem with great assiduity considering it was a religious mission supported by the church, and a great contribution to mankind. It was after the publication of that work that most of the mentally sick were considered to be witches, magicians dealing in black

magic or sorcerers.

There were, however, enlightened thinkers whose work in different guises survives today. Francis Bacon in England contributed much to the physiological approach to mankind, but it was a relatively unknown Spaniard who produced some of the most original work on the mentally ill and their disposal. He was Juan Luis Vives, and he may almost be looked upon as the forerunner of Freud and even of the welfare State. He was born in 1492. He was dissatisfied with the academic teaching in Paris where he studied as a young man, and he developed much inner conflict between what he felt was humane and scientifically correct, and the accepted religious teaching of the He considered that the orthodox teaching with regard to the sick and society made no positive contribution to mankind or life itself, and he dedescribed his Parisian teachers as band of unconquered men defending the citadel of ignorance." On returning to his own country he gathered a group around him to discuss the true meaning of learning and a living faith, dealing with emotions, instincts, impulses, drives and the motivation of behaviour in a way that was strikingly modern. He appreciated the importance of emotion in the causation of human behaviour, and he showed how a practical compromise had to be achieved by man if both his religious beliefs and natural desires had not to be stifled.

Five Points

The main points of his argument were:

(1) Information can be obtained only by direct observation or introspection, and only thus can impulses and human behaviour be understood. Once motivation is understood, it is possible to develop a social conscience and a sense of emotional independence, both in the individual and in the community. That thesis, accepted today, is the forerunner of Freud and also of the political philosophers and sociologists of the 19th and early 20th centuries.

(2) The mentally ill must be looked upon as sick people and admitted to hospitals and not to prisons. Freedom from responsibility, tranquility by means of drugs and remedies, changes in environment and sympathetic care are essential. Vives did not abolish

restraint, which lasted for another 275 years, but he was nearer to it than anyone else.

(3) Feeding and housing is a responsibility of the State. So is illness and hospitals must be State owned.

(4) In order to improve social conditions, it is necessary to make methodical observations on the spot and "the student should enter the factories and shops and examine and question the craftsman himself," thus building up a mass of factual data.

(5) Women should be better educated, should be allowed to develop their intellectual life and should play a larger part in society and culture.

It was views such as these, with physiological knowledge similar to Francis Bacon's, that slowly led to the destruction of concepts of sorcery and

witchcraft.

In the subsequent two centuries there appeared a new scientific approach and medicine was helped, as were the other sciences and arts, by the development of chemical and physical knowledge. The formation of the Royal Society in London, and the creation of the French Academy directed men's thoughts into lines of rational unbiased inquiry, and the emotional religious exaggerations of earlier ages were slowly obliterated. In the late 18th and 19th centuries not only did we have the recording of painstaking clinical observation but also the development of the microscope and the great pathological and bacteriological discoveries. In the latter century, the law, notoriously conservative and suspicious of the claims of scientists, itself acknowledged mental illness as a cause of serious crime with modifications in sentencing and in England with the opening of the first criminal lunatic asylum. Nevertheless, medicine deals with human beings, and psychiatry deals with not only structural illness, but with the relationships of human bebut ings with each other.

Following the eras of persecution, the insane were put in prisons, and later, institutions with restraint. Real hospitals came only at the very end of the 18th century. It is difficult for us to imagine the plight and the circumstances in which the mentally ill existed but the picture is well portrayed by William Hogarth in his series, "The rake's progress," although the conditions were probably worse than he delineates.

Monotonous Society

In the 19th century, social conditions, although charged with an atmosphere of revolution, were nevertheless much more secure than 100 years earlier. But although the individual had far more mental freedom than ever before, paradoxically the education of the masses was tending to create a sterile, monotonous and inactive society. There was litle dissension over religion and an atmosphere of spiritual contentment reigned both in France and Victorian England. Germany, too, having overcome the petty social revolutions of 1848, was slowly coalescing into a secure social state with the help of Bismarck and his colleagues. There appeared to be a stultifying atmosphere, as shown in the rise of the bourgeoise, with its outlook of respectability and convention. The paintings of Manet, the works of Meredith, Zola and Flaubert portray this self-satisfied acceptance of the inevitable. It was into this "weary, stale, flat and unprofitable world" that the Moravian Jew entered.

Whatever may be the final outcome of the psycho-analytical theory of Freud, he will always stand as one of the great figures in medicine and psychiatry. If people have used his hypotheses to explain metaphysical or philosophical matters other than medi-cine, Freud cannot be held absolutely responsible. He was essentially a practising clinician, starting his career as a neurologist with Charcot in Paris, before proceeding by way of the hysterical disorders to psychiatry. He developed the modern concept of the unconscious mind which had been evolved a century before; he showed the importance of emotional trauma in early life, and the influence of early environmental factors in the development of the personality. He perhaps neglected the importance of heredity and constitution, though he did not deny its existence. He was essentially a 19th-century doctor and in his lifetime genetics was an unstudied subject.

Public Objection

Freud's hypotheses caused a great stir but it was the general public that objected rather than the medical pro-fession. One of the basic fears of mankind is that of losing control. Anything that suggests a loss of control is denied. Man was, therefore, averse to an extension of the concept of the unconscious which suggested that he might not be fully in control of his actions, although in full possession of his senses. This suggested an unknown within oneself, and neither the philosopher, the scientist nor the man in the street has ever taken to this concept kindly.

However, another revolution was soon to come, and the source must be fairly said to be the discoveries of the biochemist and the biophysicist. Medicine became a matter of chemistry and physics and this approach still holds sway over all others, even 40 years

later.

For psychiatry, this biochemical and biophysical revolution has been a major advance. Though through the patient industrious research of the Germans and the Swiss, a more satisfactory classification of mental illnesses was being obtained, treatment was largely sterile, conservative, and arid apart from the often unjustifiable claims of

the psycho-analyst.

However, in the 1930's Sakel of Vienna began to treat schizophrenia with insulin coma therapy, and this was soon followed by chemically produced convulsion therapy in the treatment of the same condition. Concurrently, the discovery of the sulphonamides and, later, penicillin, led to an active attack on the inflammatory discorders of the nervous system. Chemical convulsion therapy was replaced by the electrical method, and soon afterwards Moniz of Spain introduced cerebral operations for treatment of mental tension. How rapidly the wheel had turned in 20 years!

The advent of electrical convulsion therapy must be looked upon as a great psychiatric advance, and E.C.T. today still remains one of the major treatments in medicine.

The 1939-45 war provided a great stimulus to the progress of psychiatry. Almost overnight it developed from a doubtful, strange and mystical subject to become a branch of medicine.

Later decades have shown the advances achieved by the research chemists, so that the incurable schizophrenia and the morbidly malignant melancholia have become chemical disorders of the central nervous system, treated successfully by chemical therapy. The unconscious mind, infantile experiences, sexual traumata in early life and feelings of guilt all seem to have vanished. Despite all these great advances, coupled with the great material benefits of the welfare state, we have still a great deal of ground to explore. Apart from the interest taken in geriatrics, and the material help offered by the State in pensions, allow-

ances, etc., little thought is given to the man retiring at 65, physically and mentally fit, who is paid and encouraged to "keep out and do nowt." So far, society and the State have totally neglected the psychological aspect of the aged. The Mental Health Act, 1959, the Homicide Act, 1957, the Wolfenden Report, and the reform of our abortion laws, show that our sociologists and philanthropists are willing to go further into the social relationships of our mentally sick.

Psychiatry, as a branch of medicine, is affected by the scientific approach, and present-day training in psychiatry lays great emphasis on this scientific method. This is as it should be, because the training of a psychiatrist lags far behind the training of a physician or a surgeon. Psychiatry has to catch up generations of methodical medical training to reach an equivalent standard. But when this standard has been reached, we shall have trained a learned man in psychological medicine, but not a clinical psychiatrist. Reason alone

never makes a doctor. It is the man's depth of emotion, his sympathy, his greatness of heart that outweighs all psychological theory and as well as science.

The treatment of mental illness, whatever the century, whatever the millenium, is the treatment of the human being. If we are sincere when we treat, we treat as single individuals and not as a product of a school. The history of man as he progresses shows that in order to develop he must overcome the prejudices of his particular age, and he must have the courage to face the prejudices extolled by his contemporaries, and to defeat them. In psychiatry nay in medicine as a whole - these prejudices can only be overcome by a sincere love for mankind; and thus despite the achievements of experimental and rational science. Without this love, no further advance can be expected. Thus, the history of mental illness is not the history of the experimental scientist, much though he contributes; it is the history of humanism.

CONFERENCE WEEK ITEMS

Radio and Television Interview

PROFESSOR A. H. BECKETT appeared on the Voice of the North radio programme and in a television interview on Tuesday night of Conference week.

Calculations

THE analogue computer of the Office of Health Economics was installed and demonstrated at Owen's Park on Tuesday and Wednesday.

Exhibition of Drug Jars

DURING Conference week an exhibition of drug jars and apparatus was arranged at the Manchester Museum, The University, Oxford Road, Manchester.

Traditional Weather

At about 11.40 a.m. on Sunday an exceptionally heavy shower of rain—a veritable cloudburst—descended, blotting out any views from the University windows. Later in the day the weather situation changed completely, and visitors arriving during the afternoon were greeted in sunshine.

Red Roses

ALTHOUGH it was noticeable by their accents that many of those assisting in the Conference office had origins far from Manchester and its environs, the Lancashire tradition was upheld by the

presentation to each lady Conference member, as she registered on Sunday, of a red rose. Members of the ladies' committee had provided over 250 roses for distribution.

First-coniers

FIRST member to arrive, soon after the Conference office opened at the Whitworth Hall of the University of Manchester on Sunday morning, was Miss A. M. J. McCarthy, Croydon. Later Mr. and Mrs. A. G. Reed, Leeds, and Miss M. J. Wilkes, Bristol, collected black plastic cases, each embellished with the Manchester coat of arms, containing their documents,

False Alarm

CONFERENCE members arriving on the noon train from London on Sunday were impressed by the apparent efficiency and quick thinking of the local committee. Just as the organised car shuttle service looked like being overwhelmed there arrived, with lights flashing, five large fire appliances. Alas, it was not additional transport, but the Manchester Brigade answering a call. (No serious damage was reported.)

Owen's Park

MANY Conference members chose to stay in Owen's Park, a new group of buildings provided for 1,000 students



Ladies on the visit to Manchester Cathedral find features of interest to discuss.



Dr. T. D. Whittet, London, and Professor R. F. Timoney, Dublin, examine drug jars on show in the museum.

of the University of Manchester. Situated three miles south of the city centre, the buildings include three restaurants and an assembly hall that can accommodate 750 and is used for dances and receptions. Conference members staying at Owen's Park found every modern facility for rest and recreation, including a 24-hour laundry service. Many of the pharmacists contrasted the amenities now available to students with those that were available in earlier days.

City Exeursion

A Tour of the host city, Manchester, was among the ladies' excursions on Monday afternoon. Centre of interest was the Cathedral, which dates back to 1422, though the ground on which it stands has been consecrated to the church for over 1,000 years. Visitors, who were conducted round by the Preceptor, were able to see the Angel stone, all that remains of the ninth-century Church of St. Mary and Manchester's only surviving Saxon relic. Tea was provided at the Cathedral. The tour also took in Chetham's College and library, the latter the first free library in Europe. Newcomers to Manchester seemed specially impressed by

the city's splendid modern buildings especially the hotel Piccadilly, dominating the central Piccadilly gardens, scene of several of the Conference activities.

Jodrell Bank

Two Monday afternoon tours included a sight of the famous Jodrell Bank radio telescope. The heavy demand for places on the technical tour had called for three coaches. On arrival the visitors had to be split into two parties to see a film "The Invisible Giant," which briefly outlined the history of optical and the development of radio telescopes. After the film the visitors saw the Mark I telescope, described as 'an extraordinarily clumsy instrument which has to move with the precsion of a wrist watch,' but were not able to approach closely the Mark II which is computercontrolled. Tea was taken at Capesthorne Hall, which was also the tea venue for those who had been content with a mere exterior view of Jodrell Bank, preferring to see rather more of the beautiful Cheshire countryside and to explore Capesthorne Hall itself a little more thoroughly. The excursion-ists showed special interest in the Lilian Lunn collection of handstitched models illustrating fashion through the ages. Both excursions officially "ladies," seemed to owe much of their popularity to the number of gentlemen who participated.

Hallé Concert

For many the cup of tea after registering was taken a little more hurriedly than usual, for the first dress occasion of the Conference week took place on Sunday evening when many members attended the concert given by the Hallé Orchestra in the Free Trade Hall. The concert, in which Sir John Barbirolli conducted the Hallé orchestra, proved a memorable opening for the week's events. The event had special significance because it was the scene of the presentation to Sir John of a document recalling that an area of land in Netua, Upper Galilee, Israel, has been named after him.



FOLKSY: Mrs. D. A. Carter gives a helping hand to Mrs. I. Bunting, who makes practical use of one of the exhibits at the Salford Folk Museum. Mrs. E. M. Jones looks on.

Netua (a coined name meaning "planted") is a new village settlement Netua to be created near the Lebanese border in land that has been neglected for nearly eighteen centuries. The commemorative presentation was made by Mr. Rosser Chinn on behalf of the Jewish National Fund. The programme opened with the overture "Le Carnaval Romaine" (Berlioz) and was followed by "On Hearing the First Cuckoo in Spring" (Delíus). Soloist in the piano Concerto No. 1 (Beethoven), Vladimir Ashkenazy, was recalled five times by the audience following his performance. The second part of the concert comprised the Symphony No. 4 in E Minor (Brahms). Sir John Barbirolli was given a tremendous ovation at the end of the concert.

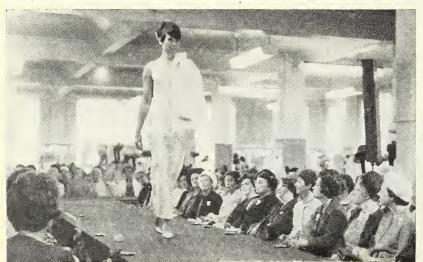
Overseas Visitors

AN unusually large contingent of visitors from overseas was revealed in the list of Conference members. Among them were Sir Eric Scott, O.B.E. (president of the Federated Pharmaceutical Service Guild of Australia) and his assistant (Mr. Geoffrey Tennyson) both of whom arrived during the week. Also from Australia were Messrs. Norman Keith

and A. Winterton, Mr. and Mrs. Tinkler and Mr. Atholl Kelly (secretary of the Pharmaceutical Association of Australia). From Belgium came M. B. Brus (vice-president Association Pharmaceutique) and Mr. N. Lambert (Service de Contrôle des Médicaments) and his wife. Mr. Ole Worts (Novo Laboratories), Copenhagen, came from Denmark, and Dr. M. Otterbech from Germany. A large group from Holland included Dr. D. A. Doornbos, Dr. R. A. Zeeuw, Professor J. S. Faber and Dr. H. I. Hannema, all from Groningen, Mr. James T. Rees from Rosenhof, and Mr. and Mrs. Stephens, British expatriates, from Amsterdam. Israel was represented by Professor M. Donbrow (school of pharmacy, Hebrew University of Jerusalem). Hungary's representative was Dr. J. Kulcsar-Gergily, Debrecen University. Three visitors listed from Switzerland were Professor K. Steiger, Dr. K. Reber and Mr. M. Baldwin. Dr. and Mrs. J. Swarbrick (associate professor, school of pharmacy, Purdue University, Lafayette, Indiana, U.S.A. were also present.

INSTITUTE OF PHARMACY MANAGEMENT Sherry Party

THE second annual sherry party of the Institute of Pharmacy Management proved, like the first, a great success. Over 100 members and guests attended, including members of Council of the Pharmacourical Society the president the Pharmaceutical Society, the president of the Pharmaceutical Society of Ireland, representatives from the National Pharmaceutical Union, other pharmaceutical colleagues from business organisations, from Ireland North and South and from Scotland. Mr. Mervyn Madge (chairman of the Institute's social and membership committee) told those present that, during the year, the Institute had gone from strength to strength. Membership had increased, two successful Conferences had been held, and another was arranged for Easter, 1967, at Malvern.
Of special interest was the trip the
Institute was organising to Oslo in October, which could embrace both educational and cultural activities. Visits had been arranged to study pharmacy in general practice, in hospitals and in State institutions. The Norwegian Minister of Health would be welcoming the party, and there would be two official banquets and a visit to the opera. A few vacancies remained, but he urged those who were thinking of going to book promptly. The president of the Institute (Professor Rowson), in an official welcome to the guests, explained the objects of the Institute and the need for its ideals in present-day pharmacy. Its work would bring credit to all in pharmacy, no matter in what section. He congratulated the Institute on the great progress it had made, and said that, with the enthusiasm shown, it would long continue to prosper. Professor R. F. Timoney, Dublin, also stressed the need for the ideals of the Institute, and felt it had a great part to play in the future of pharmacy.



A model parades at the fashion show staged as a Ladies' excursion,



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Art Into Science: Forty Years' Progress

ONE dictionary we have seen defines pharmacist in the single word "pharmaceutist." The definition may fall short of enlightening the genuinely ignorant but should appeal to Professor Shotton as relating the pharmacist's function quite properly to the scientific study of pharmaceutics.

In reviewing, in his address as Conference chairman (p 236), recent advances in pharmaceutics, Professor Shotton included a merited acknowledgement to his former chief, Professor Berry, who did much to put the teaching of pharmacy on a scientific basis. It was Berry's belief that the "art" of pharmacy concealed a scientific fact or facts that required to be discovered. The successful development of any subject, he held, was to be measured by the amount of empiricism it discarded.

By those criteria the progress Professor Shotton was able to report has been, in forty years (his own figure for the period since pharmaceutics took on its more scientific orientation) substantial. Before that time, as he said, the approach was empirical and descriptive, while such fundamental knowledge as had been accumulated on emulsification, the properties of powders, 'and even solvent extraction,' had been elucidated by others, such as chemists and chemical engineers.

Today the principle is generally accepted that pharmaceutics should be taught as an applied science based on physical chemistry, physics, microbiology and chemical engineering, though opinions naturally differ as (a) to what should be taught as a universal minimum for every pharmacist, (b) what is an extension "in depth" to provide a balanced understanding of the subject, and (c) what channelled into a specialisation for particular students. Indeed the answers to those questions must change from time to time in pace with the evolution of knowledge.

As examples of the progress that has been made Professor Shotton chose such developments as the application of reaction kinetics to assess the decomposition rate and storage life of drugs so as to arrive at the answers much more speedily and accurately than by prolonged observations in tropical conditions; the study of physical properties in relation to preparations with more than one phase (emulsions, suspensions, powders, tablets); the scientific study of powder mixing so as to establish that a product when administered as a drug is in fact uniformly mixed (a requirement

especially important in tablets); and the different physical effects of stationary and moving punches upon masses of material in tablet-making. The importance of full and accurate knowledge on subjects such as those is at once apparent, yet to list them is to leave unmentioned others that either are being already explored elsewhere or must sooner or later become the subject of investigation.

The opportunities, indeed, seem limitless. It has to be admitted that, though much of pharmaceutics has entered the domain of science, and though many empiricisms have been discarded, the "art" still operates in many areas. Finality is unlikely to be reached, since it is to be supposed that new discoveries and developments in medical research will often have to be given practical form by "art" before they in turn yield up all their scientific secrets. The search must ever be

What the Science Papers Reveal

WHATEVER the joys of the Conference for the majority of its members, the early part of the week has been notable for the amount of devotion and work demanded of the scientifically minded. By Tuesday evening they had, in five sessions (two pairs and one single), disposed of twenty-nine communications, leaving seven to be considered on Thursday afternoon. That total of thirty-six is equal to the highest number recorded (in 1959) in the past ten years and there will doubtless be participants who feel that justice cannot be done to worth-while papers in the necessarily short time allocated for the discussion of each one.

However, one of the Conference organisers' motives in this "concertina" activity appears to have been to leave the floor clear on Friday for all to discuss, under the president's leadership, proposals for new medicines legislation. The occasion is only the third since professional sessions were introduced into the conference timetable in 1956 that scientists of pharmacy have not had to divide their loyalties, and any contribution they may make to the professional discussions has full opportunity to be made and is of particular interest.

The science papers themselves again reflect the breadth of research carried out in pharmaceutical laboratories. In the sphere of pharmaceutics the School of Pharmacy, University of London, presents yet another series of papers on the problems of tableting, while Chelsea College of Science and Technology has carried out a critical evaluation of methods of measuring angular properties of materials—work that has applications likely to influence hopper and chute design. From industry comes an investigation into the thixotropic properties of an oil-in-water lotion, and from the United States information for the tablet maker, this time on the uptake of water vapour by polymer-film-coated tablets.

Many pharmacists will be pleased to see that pharmacognosy continues to hold its place. The modern pharmacognosist has an important rôle to fill, as evidenced by alkaloidal investigation of Fagara and Colchicum species reported from Strathclyde and Bradford pharmacy departments. More traditional, however, is a comparative study of the anatomy of Voacanga spp. leaves, also from Bradford.

A thread running through several branches of pharmaceutical research is the study of preservatives. From the Hebrew University of Jerusalem comes a warning that solubilisation may affect the activity of a preservative when it is formulated with a surfactant, and similar observations have been evaluated at laboratories of Imperial Chemical Industries, Ltd., using a molecular sieve technique and at Strathclyde University using a Coulter counter. Other papers from Bradford, Chelsea and Ibadan take further the study of the effects of antimicrobial agents in bacterial and fungal growth. Papers in the realms of pure bacteriology deal with bacterial viability, spore germination and a process for preparing spore-containing powders.

Study of drug metabolism and excretion continues apace at Chelsea College of Science and Technology, which provides no less than ten of the Conference science contributions. Reports of work on oral prolonged-release forms of dexamphetamine and on lignocaine deserve special mention.

A disappointing trend is the further diminution of industrial participation. The five papers from industrial laboratories emanate from but two manufacturing companies. In a review of the history of the Conference by the 1963 Conference chairman Mr. H. G. Rolfe, it may be recalled that he put industry's contribution in the years 1955-62 at 40 per cent. of the total. Since then the proportion has progressively fallen to nine of thirtyfive papers from seven companies in 1963; nine of thirty-two papers from seven companies in 1964; five of thirty-one papers from four companies in 1965; five of thirty-six papers from two companies in 1966. Much has been written on the pharmaceutical industry's contribution to both basic and applied research, and it would be a consummation devoutly to be wished that research from manufacturers' laboratories could be presented for open discussion at the Conference. In our view that is the proper place for their presentation.

Overseas Trade in Pharmaceuticals

United Kingdom exports of medicinal and pharmaceutical products during July were valued at £5,527,000, against £5,376,000 in July 1965. With the addition of medicated and unmedicated surgical dressings, etc., which together form division 54 of the Overseas Trade Accounts (H.M. Stationery Office, price 30s.), the total for the month was a little over £6 million. The table shows a "breakdown" of exports in the group, and the values of similar products imported into the U.K. during July.

The Irish Republic became the largest single market during the month, with purchases valued at £399,000. Shipments to Australia, valued at £355,000, placed her in second place after beinng fourth in June; close behind came France's £347,000 and Nigeria's £331,000. Sales to countries in the European Economic Community

totalled £920,000, and to the countries in the European Free Trade Association (including Finland) £702,000.

Imports of pharmaceutical products, valued at £1,427,000, almost reached a record level. Only in May were they higher, and then only marginally. Imported antibiotics cost £305,000 and alkaloids £116,000. Almost one-third (by value) of imported pharmaceutical products came from Western Germany, bringing total purchases from that country for the seven months of the year to £2,244,000 — a 90 per cent. increase on the corresponding period of 1965. Imports from the Irish Republic, the fourth largest supplier, were valued at £135,000.

NEW BOOKS

Synthetic Analgesics: Part II (A) Morphinans; (B) 6, 7,-Benzomorphans

Part A: J. HELLERBACH, O. SCHNIDER, H. BESENDORF and B. PELLMONT. Part B: N. B. EDDY and E. L. MAY. Pergamon Press, Ltd., Headington Hill Hall, Oxford. 9 x 6 in. Pp. 192. 70s.

This is the eighth volume in an international series of monographs on organic chemistry subjects and the second dealing with synthetic analgesies (the first, volume 3, was concerned with diphenylpropylamines). The two groups of compounds in this volume—morphinans (representing a simplified version of the morphine molecule) and benzomorphans (part structures of the morphinans)—are each considered under the headings "chemistry" and "pharmacology." Information given includes structure, synthesis, pharmacological activity and summaries of clinical work. The book is intended for use by graduates and undergraduates in pharmacology and chemistry.



THE BEST CURE FOR A COLD.

From Tom Hood's Comic Annual, 1887

EXPORTS	£'000		£'000		£'000
Vitamins in bulk	162	Organo therapeutic glands, etc.		Sulphonamides in bulk	85
,, products	65	", in bulk	18	,, tablets	91
Antibiotics		" products	10	,, other products	24
Penicillin in bulk	192	Sera and vaccines	101	Proprietary medicines	. 1,623
injections	89	Aspirin in bulk	46	Unclassified medicines	766
tablete cintments etc	366	products	89	IMPORTS	
other antibiotics in bulk	221	Antihistamines products	65	Vitamins	65
1	577	Antipaludics products	101	Antibiotics	305
Alkaloids in bulk	64	Barbiturates in bulk	27	Alkaloids	116
1		products	22	Glycosides, glands, sera, vaccines	36
,, products	25		109	Proprietary and vetinerary medicines	
Hormones in bulk	367	Medicated confectionery			236
" products	260	Ointments, liniments*	105	All other	230
Glycocides Grounds	16	Surgical dressings	518	*Not elsewhere specified	

FIRST PROFESSIONAL SESSION Reorganising the Branch System

THE paper setting out the Council's proposals for branch reorganisation (see C. & D., August 13, p.144) described the branch system and its history. It defined the aims of branch organisation and proposed that:—

- 1) Branches should invite joint activity with other local organisations, including a study of boundaries;
- 2) The holding of regional conferences should be encouraged;
- 3) Branches should have wider and more specific responsibilities;
- 4) Branch secretarial arrangements should be strengthened;
- 5) A pilot scheme in a suitable region embodying the suggestions made should be initiated from headquarters.

DISCUSSION of the Council's proposals for branch reorganisation began when the president (Mr. J. C. Bloomfield) opened the first professional session promptly at 9.30 a.m. on Tuesday. As chairman, he said, he had invited three speakers to open the discussion—Mrs. S. T. Dickinson (secretary, Nottingham Branch), Mr. J. R. Phillips, Bournemouth, and Mr. S. E. Morgan, Bedford (who was unable to attend but had appointed a deputy). Mr. Tristram who would present the paper was, with Mr. Maplethorpe, the longest serving member on the Council. He was chairman of the Organisation Committee and his experience therefore made him well qualified to undertake the task.

Well Ordered Family

Mr. Tristram, in his address, said he sincerely believed that the objectives outlined in the proposals would, if achieved, be of material benefit to the profession of pharmacy and the prac-tising pharmacist. The document should not be regarded as criticism of the running of branches or of their officers and committees—in fact other organisations could well be jealous of the support the 140 branches gave the parent Society. Much work fell on branch secretaries, and the branches of those who were more energetic and enlightened than others had naturally benefited. Nobody wanted to see a completely stereotyped administration substituted for the existing arrangement. ment. The relationship between the periphery and the centre had been on the lines of a well ordered family, and the Council wished that relationship to continue. It must not be overlooked that, since the branch organisation had been founded, the constitution of the Society had changed. Membership had become compulsory and nothing in the history of the Society had given it greater strength, conveying as it did the ability to speak on behalf of all registered pharmacists. But it had changed to some extent the Society's domestic relationships.

In these days of rapidly advancing knowledge the pharmacist must have access to teaching hospitals and schools of pharmacy. Although, said Mr. Tristram,



Mr. W. E. Tristram

he would be the last to recommend all pharmacists to form a union there must be a corporate spirit.

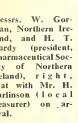
The Council was engaged in furthering the interest of the public in respect of the supply of drugs. "We have certain views which we believe reflect the desires of our members." The Council's help could best be given by the proposals put forward. The smallest branch, said Mr. Tristram, had a membership of twenty, with no school of pharmacy or teaching hospital in its area. That branch would be greatly strengthened if it were part of a region in which all the facilities for post-graduate education were available. In some areas there were as many as five local pharmaceutical organisations, which meant dissipation of time and energy. That was where the "unifying rôle of the society" came in. A pilot scheme in one region might provide a basis on which to build a national scheme.

Referring to the proposed link between the school of pharmacy and the conscientious branch member he said the science of pharmacy was now too deep and complex for anyone to expect that an individual member could keep up to date without post-graduate instruction and refresher courses. Headquarters often received complaints that it was difficult for the ordinary citizen to obtain medicines. "This is an absurd situation in a tightly packed island . . and it must be rectified. This question of a planned pharmaceutical service is part of the Society policy, but it can't be made operative without your help."

Branches and Ethical Matters

On ethical matters, misconduct was often reported by a Society inspector and was considered by the Ethical Committee. Many of those cases could more suitably be dealt with by the local branch. Mr. Tristram concluded by referring to members' responsibility towards the pharmacists of the future. "Whatever we can do towards establishing contact with them and maintaining that contact will be well worth while."

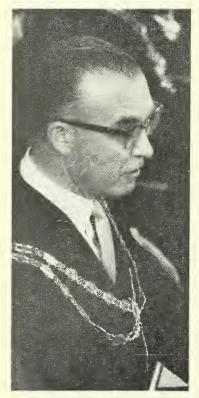
Called upon to speak, Mrs. Dickinson agreed in general with the Council's proposals. She had planned to say that they did not go far enough but Mr. Tristram's introduction had "cut the ground" from under her feet. In her branch ('about the average') 8-10 per cent. attended meetings, but she was aware that they had in the area a number of eminent pharmacists whose sphere was so specialised that they had little interest in the branch meetings. That was not "apathy with a capital A." The speaker agreed with Mr. Tristram that geographical organisation would not be successful, and believed that Mr. Phillips's objects (see C. & D. September 3, p. 210) were ultimately the same as those of the Council—to bring the membership into more effective practical relationship with the Society. Mr. Phillips's proposals, however, were more dramatic. If an attempt were made to try and alter the branch system by bringing in a smaller number of larger branches they might be faced with new problems. The best forward step would be regional organisation. The Council had suggested four years ago four such regions but Mrs. Dickinson favoured twelve to twenty, each with seven to twelve branches. A regional







rs. V. Burden, London, receives the Red Rose of neashire from Miss R. Segal at the reception office.



The president (Mr. J. C. Bloomfield) speaks at the opening session in Whitworth Hall.



Arrival by air from Dublin at Ringway Airport, Manchester. In the front row is Mr. Jack P. O'Donnell president of the Pharmaceutical Society of Ireland, Mr. J. G. Coleman (registrar of Society) is second from right.



All smiles at the start of the 1966 British Pharmaceutical Conference as Miss S. Fowler, London; Dr. G. E. Foster, Dartford; and Dr. K. R. Capper, London, arrive at Piccadilly station, Manchester.



Taking tea on arrival at the Whitworth Hall: Left to right: Mrs. J. Stearne, Master R. A. J. Wright, Miss M. J. Wright, Mrs. M. M. M. H. Wright and Mr. T. W. Stearne.



of the large contingent who attended the Hallé concert at the Free Trade Hall, Manchester, day evening.



Old stagers both: Mr. H. Humphreys Jones with Dr. T. E. Wallis.

BRITISH
PHARMACEUTICAL
CONFERENCE
MANCHESTER
1966

Pictured People and Scenes



and Mrs. S. J. Turner are welcomed at Picca-Station, Manchester, by Mr. Chorlton (British al Representatives' Association).



Platform view of some of the members present at the opening session in Whitworth Hall.



E. A. Skew, Birmingham, receives "the cup cheers" from Miss B. Schofield (a member of Ladies' Committee) on arrival at Conference quarters.



Mrs. H. Steinman, Mrs. A. Aldington and Mrs. J. C. Bloomfield at the opening session.



Professor E. Shotton at the microphone.

officer and committee would co-ordinate the branches in the region and would organise meetings of an educational nature. The regions could be centred around schools of pharmacy, but the speaker felt that that was not important at the moment. Regional organisation would not detract from the authority of the branch. Mr. Phillips's paper omitted to define "the branch" but the branch was not the secretary or the committee. It was an association of members that should act as a melting pot for local ideas. It would be useful if all branches could have a headquarters or meeting room at which discussions could take place in the absence of a speaker. Branches should be encouraged to produce newsletters. The branches that were active now were doing reasonably well but needed more guidance from headquarters. No matter how good a branch secretary might be, however, he could not instil interest into a neighbouring "dead" branch. Regional officers could not, for reasons of finance, all be full-time officers of the Society, and inspectors were too fully occupied to undertake the work. The idea had been put forward that members of Council should do so but the problem of territorial representation would arise (the speaker did not want that). It was possible that each region could choose the best branch secretary and promote him as regional officer. It would then be up to headquarters to give him every opportunity to meet the organisation committee and to feed him with knowledge and ideas on a much greater scale than at present.

'Epistle to the Mancunians'

MR. J. R. PHILLIPS, Bournemouth, said he took his text from Tristram's epistle to the Mancunians, verse 7, lines 5, 6 and 7:—

5, 6 and 7:—
"It seems clear to the Council that very drastic reorganisation would not be successful, however attractive in theory."

'If it is clear, then they should have told us why.' The lines seemed to epitomise the whole attitude of the powers that be— whoever they are.' 'They represent an apathy at the centre, which is so great that it leaves one with the impression that this is an attempt to stifle.' When he had seen the Council paper he had not thought a great deal of it and so 'I took the trouble to prepare a paper on my own,' which had been published in the C. & D. 'and was at least not stifled.' His purpose, said Mr. Phillips, was to ensure that both points of view were put forward. The system Mr. Tristram advocated was a status quo system. 'We know well it requires a great amount of effort to perform the most elementary task.' purpose of his paper was to present an idea of a branch that was sufficiently active to be largely self-perpetuating.

It was useless organising an elaborate educational system 'if you do not have a branch to support it,' or run a newsletter unless there were sufficient interest in it.

It was a waste of time to launch a public-relations campaign unless a branch had a foundation on which to build. A change of thought was required. Mr. Tristram's paper had not looked at what the branch might do. If a branch were going to perform a useful function it must be supported from the top.

Mr. Bloomfield said he took exception to the manner in which Mr. Phillips had



Mr. J. R. Phillips

publicly circulated a personal letter which Mr. Phillips had sent to him.

MR. R. S. HARRIS, Bedford, referred to the Bedford resolution at the Branch Representatives' meeting in May, the purpose of which had been to secure the approval of Council to the principle that a branch should eventually be given responsibility for the field of ethical conduct of its members. The principle could not be extended to legal matters, but the idea could enhance the prestige and reputation of pharmacy. The Bedford concept was incompatible with a situation whereby oversight and control was vested in a remote headquarters.

Given an opportunity to reply to the president's remarks, Mr. Phillips mentioned that his letter was an open one and he would not in any way usurp the president's office.

First speaker from the floor was MR. H. HUMPHREYS-JONES, who came to the microphone amid considerable applause. He recalled having been at the Nottingthe "Conference meeting in 1922, when the "thorny problem" of absorption of the Conference by the Society had been discussed. It had then been feared that that would impede the freedom of the Conference, though it had not turned out like that. Mr. Tristram's paper was 'not one of his best' and appeared to contain much repetition. The speaker likened the relationship of the Society to its branches to that of the parts of an oak tree. He had never heard of any trouble between the trunk and the leaves: 'What a pity we humans cannot take an example of that kind and try and form a Society and not think of the Society as one thing and the branches as another thing.

MR. C. Mellor, Stockport, said there was an idea that smaller branches should be amalgamated with larger ones, but members would then find it too inconvenient to attend meetings at the centre. All members—including Council members—had their ideas coloured by local experience, which might not be applicable nationally. What was needed was a full-scale working party from headquarters that would visit pharmacies, hospitals and industry to interview pharmacists—not to find out why they did not come to meetings, but what could be done to get them to do so. But was the Society any worse, he asked, than other organisations? 'Perhaps we should not waste the Council's

time but allow it to get on with more important work, which eventually will make branch organisation more attractive to individuals.

Call for Referendum

MR. S. WOZNIAK, Fife, said he had been just as surprised as many others by Mr. Tristram's paper. He suggested that the Council should apply its energies to finding out what the majority of members wanted to do. Then, and only then, could the Council carry out its responsibility. The first move should be to institute a referendum to find whether members wanted to become 'professional, or traders, or mixed.' He did not think a 'mixed' organisation could flourish. With the knowledge given by a referendum the Council could build a suitable branch structure. The referendum should state clearly the advantage of each type of organisation and activity. As a next step the Council should take over the negotiation of salaries. He criticised the J. I. C. scale as 'a shameful document.' Mr. J. Kerr, Newcastle, said it must be realised that the basis of branches was

MR. J. KERR, Newcastle, said it must be realised that the basis of branches was democracy. Branches were a collection of people who chose to be active or non-active. If the Council adopted a dictatorial attitude 'the tender branches' would probably object and die. He noted that the Bournemouth branch officers had been elected by approximately 80 members of the branch out of a total of 470.

MR. H. MACKLEY, Newcastle, was of the opinion that what happened at branch meetings might not matter. Some of the members in his branch were 60 miles from headquarters. They could not be expected to attend. What was important was the problem of communication. 'It is difficult to be abusive to the person you know.' Therefore he preferred to concentrate on the personal aspects. Mr. Wozniak had asked for a referendum but Mr. Mackley said 'we can't afford to wait. We must get on and do something.' He appealed to members to 'go back to the branches and try and start something even if it is only an objection.'

MR. A. Cowan, Bannockburn (chairman of the Society's Scottish Executive) pointed out that, in Scotland, organisation and administration were the responsibility of the Scottish Department and its Executive. There were ten branches and half of them had been created since 1950 as a deliberate policy of getting at the members. The aim was to set lines of communication to as many members as possible—other factors, such as the presence of schools of pharmacy, were irrelevant. In Scotland there was no equivalent of National Pharmaceutical Union branches, and the Pharmaceutical Committees were clearly defined bodies. Communication had been established with the latter, as there were spheres of activity in which they were more valuable than the local branch. The branch newsletter was a way to stimulate activity. On reorganisation, the model rules for branches were as valid today as when they were first thought of but conditions had been changed—in education and relations with the Government, for example—and they must be re-evaluated. Certain things were best done centrally while others were best done at local level. Personal contact on the floor of the professions was important.

Mr. P. E. STEDMAN, Hove, regretted hat his local branch (of which he was hairman) saw a disappointingly low number of students at meetings. A weakness of pharmaceutical education was that students had little idea of what was before them. The speaker said that branch secretaries were pharmacists workng long hours, and to give them another ime-consuming job, as proposed, would be too much. Could not the Society have number of full-time secretaries—say one per six-to-ten branches—to take wer many of the chores? They might give some "official" status to what might seem a somewhat amateur organisation or even a "clique." He suggested that the Southeast Federation might be enlarged in scope in that way as a pilot scheme.

MR. A. G. M. MADGE said that the problems of branch secretaries were apathy and lack of communication with headquarters. Council members could not, he believed, devote the time really required for their work. He proposed an increase in the number of Council members, based on regional representation and a number of "elder statesmen" with at least nine years' Council experience.

Unsound Foundations

Mr. D. H. MADDOCK, Cardiff, claimed the architects had presented excellent schemes for reorganisation but the foundations were unsound, in that the majority of members were not interested. The job was to revitalise them. The speaker gave examples to show how long it took the Council to take action. Although it had taken them only twelve years to agree to allow branches to submit motions, the democratic situation in which decisions reached by the majority the members' representatives were upon the Society's executive, binding had still not been reached over thirty years later. The problem was not branch reorganisation but the Society's reorganisation. Members were not treated as individuals, and every edict of the Society began 'Thou shalt not.' 'When will the Society's so-called leaders come down to earth from the clouds and realise that to us individuals there are more important aims in life than building another palace in Lambeth?' The time had come for a change in the constitution of the Society. Mr. Maddock asked members not to approve 'these tepid, harmless proposals.

MR. T. LLOYD JONES, Rhyl, noted the proposal to associate branches with hospital-board areas, and pointed out that there was only one board for all Wales. He also asked branches in whose areas schools of pharmacy were situated to invite students to their meetings.

MR. K. JENKINS, Bovingdon, spoke of his frustration as a branch secretary and member of Council arising from lack of communication between the Government, Council and members. The weakness of the Council member was that there was a limit to which he could neglect his business to study Council work, and his strength was that he submitted to a keenly competitive national election that had not been shown equally competitive where regional representation was the practice. He suggested national election of Council members coupled with regional responsibility thereafter. If the committees of seven or eight branches appointed a

regional group committee there could be four meetings a year attended by the same Council member, who could report to the Council. The meetings would be to discuss policy and local matters such as participation in postgraduate medical centres and the need for pharmaceutical services in developing areas. Informally, the Council member would be accessible by telephone or personal visit. Mr. Jenkins was critical of the Council's proposal to encourage regional conferences. They were expensive and made inroads on valuable time. Also too heavy a burden was placed on the individual branch secretary. Because many small branches were active locally but not politically nationally, they should not lose their identity. That penalty should be reserved for total apathy. A pilot scheme as proposed was futile as it already took one to four years to implement branch resolutions, and in that time the circumstances might have changed. No mention had been made of the link between the Society and Government departments.

MR. G. M. Fox, Harrow, considered the problem that had not been tackled was the question 'What is the purpose of the Branch?' It was useless having an organisation without a purpose. He suggested that a committee of five or seven members should be appointed as a steering committee to 'thrash this out' and report to the Branch Representatives' meeting, which could in turn work out an organisation to 'implement the purpose.' Nevertheless, whatever type of organisation was proposed, it would be useless unless there were a sound two-way system of communication.

MR. MAXWELL GORDON, Leeds, accepted Mr. Tristram's paper despite its weaknesses, 'as an honest attempt,' but said he had failed to discover any reference to the basic problem—apathy. As to closer co-operation between branches, his own branch had held regional conferences but that had not brought added strength.

He suggested the main problem was 'lack of knowledge.' So few members knew what was happening in the Society. If the Council were afiaid to publish details in the Society's journal because the information might become public knowledge, then they should use branch newsletters: Where local branches were not strong enough to support such publications, 'the Society should do it for them.'

Paid Regional Officers

In spite of the cost, he suggested the appointment of paid regional officers to call upon every pharmacist to discuss the problems and give information. Ethical matters however, would be excluded from discussion as being the responsibility of the Society's inspectors.

MR. A. R. G. CHAMINGS, Brighton, felt it was essential to begin with the student. He regretted that there were heads of schools of pharmacy who were ashamed of their pharmacists (cries of "No!"). 'We should see to it that the heads of our schools are firstly pharmacists, and they should bring their students into contact with the profession.' It was important that during their early days students should become acquainted with retail pharmacy.

MR. KENNETH HOLLAND, Romford,



Miss Hersant, Dr. E. Hersant, Mr. Humphreys-Jones and Professor H. Brindle at lunch on Monday.

did not think there could be a better branch system. Looking at other associations, 'We still appear to be a pretty sorry lot'. He added 'We have elections when we knock off Council members like ninepins.' Generally the system worked, but there was a need for 'a little something.' However, he asked members not to delude themselves into thinking that size was all that important. The branches must be responsible for any regional organisation, not the organisation for the branches.

MR. MAIR, Glasgow, was surprised that little had been said of the disciplining of members by branches, which he thought was a most dangerous suggestion. Personalities would be involved. Furthermore there could be possible differences in interpretation of the code of ethics. Discipline must therefore be a central matter. He hoped Mr. Tristram's document would be submitted to branches for further discussion.

MR. A. Howells, Bexley Heath, had come to the conclusion that Mr. Tristram had presented an excellent paper 'because it permits us to run branches as we want,' not the Council to run the branches. He considered area meetings should be organised by the Society and Council members should speak at them only on matters of National importance. He did not think it was possible to lay down a method of running all the branches. Each group of members had its ownpoint of view. It was, however, necessary for members to have knowledge of Council policy, and he asked for fuller Council reports.

Before the president asked Mr. Tristram to reply to the discussion, he said he must challenge the statement by Mr. Chamings about the heads of schools of pharmacy. He therefore asked Mr. Chamings to let him have the details on which the statement was based.

In his reply, Mr. Tristram said he thought there was a good deal in Mr. Phillip's proposals, but Mr. Phillips seemed to visualise a similar pattern imposed on all branches. The Council believed a new spirit had got to be created, and that there must be free development of the branches. The suggestion about the appointment of officers was a useful one. If resolutions were sent in from branches the subject of branch reorganisation would be before the Council and would prepare the ground for a further paper on the subject. Mr. Tristram emphasised his belief that branch apathy was more apparent than real. There was a spirit of enthusiasm for pharmacy and a general desire to serve the community.

BRITISH PHARMACEUTICAL CONFERENCE, MANCHESTER, 1966

CONFERENCE BANQUET Previous Manchester Conferences Recalled

THE Conference banquet was held in the Piccadilly Hotel on Tuesday. At each lady member's place at table was a gift from the local committee of a presentation box containing coloured hand towels. A floral display piece depicting the Manchester coat of arms was at one end of the banqueting room. Professor Shotton welcomed the distinguished guests the Lord Mayor and Lady Mayoress of Manchester and His Grace the Duke of Devonshire and the Mayor and Mayoress of Salford there being, as he pointed out, no formal toast to the guests.

President's Toast

THE PRESIDENT of the Society (Mr. J. C. Bloomfield) in proposing the toast to "The City, Ports and University of Manchester," said: "Any visitor to the capital of the North-west must recognise he faces a formidable task in framing his remarks so as to do full justice to so great a trinity. There is the additional difficulty that the fame of Manchester—industrial, commercial, academic and cultural—is known to the world and the proclaiming of and at length may well be deemed unnecessary, for the fame of Manchester speaks for itself. When the first of our four annual conferences to

be held here took place in 1887, my predecessor lamented the fact that, although the story of the Pharmaceutical Society had been well told, he felt deeply and at times sorrowfully, that it had not received the recognition that it deserved. The story of the Society and of pharmacy is still being told, and we are grateful to you both, as we are to all our guests, for your kind recognition of our rôle in helping to preserve the health and to foster the welfare of the community."

Mr. Bloomfield recalled the members' admiration of the Lord Mayor's record of public service and for the

Mr. Bloomfield recalled the members' admiration of the Lord Mayor's record of public service and for the same reason he extended tribute to the distinguished Chancellor of the University of Manchester. "The bond between you as chancellor and ourselves has physical expression in the department of pharmacy of the University of Manchester where it was established in 1883. John Dalton was the first lecturer in pharmaceutical chemistry in the first completely equipped medical school in the provinces—the Pine Street Medical School—which was amalgamated with Owen's College in 1872 and was the foundation of the University medical school. Manchester was the first university in Britain to offer a degree in pharmacy no less than 62 years

ago." Mr. Bloomfield then referred to its private schools in pharmacy. The Manchester School of Pharmacy, opened in 1882 by Mr. Turner, who was succeeded by Harry Brindle who later was installed as first professor in pharmacy at the University.

Clayton, Berry, Bullock

"An early member of the private schools' staff was Mr. George Clayton, who in 1890 opened his own school—the Northern College of Pharmacy—where he was joined later by Mr. Fred Lawson. A student and subsequent teacher at that school was Professor Harry Berry who was to become the Dean of the school of pharmacy, London University. It is fitting that we should look at the past and recognise the value of our her tage."

The president said the Conference was indebted to Professor Kenneth Bullock and his staff for the contribution they had made to the conference organisation. The Conference committee, under the chairmanship of Mr. Steinman had laboured long and hard to achieve perfection and it had succeeded.

He had heard that Mr. T. D. Clarke attributed his success as honorary secretary to the aid so nobly given him by his wife, Mr. Bloomfield



Scene in the Peacock Suite of Piccadilly hotel at the Conference banquet on Tuesday.

knew that the members would join with him in thanking all the ladies, especially Miss I. Roberts (chairman, ladies' committee) for their great con-tribution to the success of Conference week. He congratulated Mr. Steinman on his recent O.B.E. award, which had given pleasure to his many friends. Since 1841 when the society and the branch was founded nothing had disturbed the relationship between London and Manchester, notwithstanding as one writer had put it "That there have been occasions when reciprocal esteem has been warmed and brightened by a little necessary friction. He suggested that the impeccable choice of words would prove to the Duke of Devonshire, who had experience in Whitehall, that pharmacists "possess an included in the property of the prope innate diplomacy that some politicians might envy."

The Lord Mayor Responds

In her response the Lord Mayor (Alderman Nellie Beer), said she did not feel competent to speak for the University because she was 'not altogether familiar with all that went on there.' She was aware, however, of its greatness, and of its expectations for the future, and grateful for its achievements in the past. She ought, no doubt, to display a degree of civic modesty but with her fellow citizens could not conceal a sense of pride and loyalty. She paid tribute to the great contribution that "Harry" Brindle had made to local government before he was made professor of pharmacy. "We often

turned to him for help and advice when he was a member of the Health Committee. We received it." Great progress had been made in education and health and Manchester would endeavour to improve its services 'with the help of some of the ladies and gentlemen here tonight.'

Pharmacists' 'Tact and Patience'

It was expected that the ability of a pharmacist should match up to that of a magician. From what she knew of the ability of pharmacists the profession had tact and patience and could still convince everyone that theirs was the greatest of all the sciences.

The Duke of Devonshire said he was proud, as newly installed Chancellor, that the Conference should be using the University for its deliberations, and especially because they had a department of pharmacy of which they were extremely proud. The gathering was a great and remarkable one because it brought together in a conference all aspects of pharmacy. What was so splendid was that all the work was ultimately directed to the alleviation of human suffering. Without the work of pharmacists throughout the world the doctors would be virtually powerless. Professor Shotton's work was known throughout the world, as was the work of the Conference, and it was appropriate that it should be led by so worthy a leader.

In his response Professor Shotton said that over the years the Conference had undergone many changes of organisation though the original concept of the promotion of pharmaceutical research and the interchange of ideas went on in a stimulating way. Changes were likely in the future but he was sure the Conference would remain a platform for scientific discussion. The Conference had had great support from the Council of the Society and the association had been beneficial to both bodies. He concluded by thanking the University for the wonderful facilities it had placed at the disposal of the Conference.

Academic Reception

FIRST official social function of the week was a reception by the council of the University of Manchester in the Whitworth Hall on Monday evening. Guests were received by Professor A. C. P. Campbell (pro-vice-chancellor of the university) and the Hon. Mrs. Campbell, the Conference chairman (Professor Shotton) and Mrs. Shotton, and the president of the Pharmaceutical Society and Mrs. Bloomfield. Music was provided for dancing but many Conference members seemed to prefer wandering through the many galleries of Manchester Museum. There they were able to see natural history and geological specimens or live fish and reptiles in an aquarium. In addition, a special exhibition of drug jars, apothe-caries' equipment and documents relating to early pharmaceutical organisation in Manchester was open for inspection in the basement and aroused much interest.





At the academic reception Professor and Mrs. K. Bullock are received by the Conference chairman (Professor E. Shotton) and pro-vice-chancellor of the University (Professor A. C. P. Campbell). At right, Mr. J. C. Bloomfield greets Dr. F. Fish, Glasgow, and Professor Shotton receives Professor D. A. Norton, Bristol.





Professor H. H. Campbell, Edinburgh, chats with Mr. and Mrs. S. Maconochie, Dundee, at the academic reception. At right, a group that includes Mrs. M. Robinson, Mr. Ben Woodhead, Mrs. J. B. Kay, Mr. R. B. Longmore, Mr. K. Swann and Dr. B. Robinson.

BRITISH PHARMACEUTICAL CONFERENCE, MANCHESTER, 1966 SCIENCE SESSIONS

DR. W. MITCHELL took the chair at session A of the first science session, at which 120 members assembled. He mentioned that the future of the Conference was being discussed and that the Executive would be seeking information from members as to which branch of pharmacy they came from. He then asked DR. F. G. STEVENS to present the first paper, adding that it was the first occasion on which Dr. Stevens had presented a paper.

PYRAZOLOTRIAZINES: A new class of tumourinhibitory agents

R. W. BALDWIN, M. W. PARTRIDGE and M. F. G. STEVENS (University of Nottingham)

A NUMBER of compounds based on the ring-system pyrazolo [3,2-c]-as-triazine (which is isosteric with purine) have been tested for tumour-inhibitory properties. The experimental tumour were in mice (mouse sarcoma \$ 180) and rats (methylcholanthrene-induced),



Mr. F. G. Stevens delivers the first paper at science session group A.

and the compounds were administered by daily intraperitoneal injection. Animals were examined after nine days (mice) and seventeen days (rats) and the inhibition determined by comparing the tumours with those in control animals. Indications from the preliminary screening were that several of the tested derivatives show anti-tumour properties.

DR. B. ROBINSON, Manchester, asked if there was any evidence to show that pyrazolotriazines might be acting as purine antagonists, but DR. STEVENS thought that doubtful on account of the precise structural requirements of the natural purine bases, notably the presence of substituents in the 2- and 6-positions of the purine ring, which were critically involved in hydrogen bonding in nucleic acids. There was a similarity between the reactive 6-position of the pyrazolotriazines and the 9-position of purines, which underwent ribosidation in purine metabolism.

DR. G. FOSTER, Dartford, sought data on the toxicity of the compounds and was told that screening tests were being carried out but that results were not yet available. The dimethyl compound appeared to be a vasodilator. DR. SENIOR, Macclesfield, pointed out that

the azopyrimidines, which were fluorescent substances, could cause a similar redding in rats and mice. The AUTHOR agreed that the dimethyl compound was fluorescent.

Second item on the programme, a short communication, was introduced by Dr. J. D. PHILLIPSON, Manchester.

SOME HETEROYOHIMBINE ALKALOIDS - Relationship between thin-layer chromatographic behaviour and stereochemistry

J. D. PHILLIPSON and E. J. SHELLARD (Department of pharmacy, Chelsea College of Science and Technology, University of London)

THE behaviour on chromatographic thin layers of two new heteroyohimbine alkaloids, mitrajavine and hirsutine recently isolated from Mitragyna species, has been compared with some related alkaloids of known stereochemistry. The results suggest that there may be in heteroyohimbine alkaloids a relationship between structure and chromatographic behaviour. The authors offer suggestions on the stereochemistry of the new alkaloids.

MR. B. ROBINSON, Manchester, suggested that nuclear magnetic reson-

ance spectroscopy should provide an easy means of clearing up some of the problems of geometrical isomerism dealt with by Dr. Phillipson. He also asked whether the authors had measured the circular dichroism of all their compounds so as to be certain of their absolute configuration. Dr. Phillipson agreed that N.M.R. was a useful tool and had in fact been used. The authors were not claiming that chro-matography could be used to settle configurational problems. Professor A. Beckett, London, confirmed Mr. Robinson's opinion on N.M.R. and mentioned that all compounds so far investigated by the authors had two of the functional groupings on which classification was based trans to each other. He thought that, by using a combination of ultra-violet spectroscopy. N.M.R. optical rotatory dispersion and circular dichroism it should be easy to determine the absolute configuration when ring E of the alkaloids was open. Dr. F. FISH, Glasasked whether the experiments had been done at constant tempera-ture because of the variation in Rf value with temperature. He also asked how the authors had chosen their running systems. Dr. PHILLIPSON replied that chromatograms had been run at laboratory temperature, which was the reason for giving Rf value as the average of six results. Previously described running systems had been tried and found unsatisfactory. After experimenting with thirty methods they had selected the ten simplest. He told Dr. MITCHELL, who asked how far geometrical configuration would be expected to equate with T.L.C. results on, for example, tropine alkaloids, that such a relationship had already been found to hold. Similar connections had been found in the steroid field.

Presenting his first paper to a British pharmaceutical conference, Mr. H. H. LAYCOCK summarised his contribution.

SOME ALKYLTRIMETHYL QUATERNARY AM-MONIUM ANTIBACTERIAL AGENTS – Determination of homologue composition by gas chromatography

H. H. LAYCOCK and B. A. MULLEY (Department of pharmacy, Bradford Institute of Technology)

RECENT work has shown that the micellar properties of quaternary ammonium surface-active agents may be linked with their antibacterial action. Both micelle formation and antibacterial activity depend markedly on the chain length of the hydrocarbon group attached to the quaternary nitrogen, but commercially produced materials are mixtures of homologues. The authors have devised a gas-chromatographic method for measuring the homologue composition and report that cetrimide samples contain about 25 per cent. of C₁₂ compounds, improving their solubility. Results for two Morpan samples agreed reasonably well with the homologue composition of the alcohols used in the production of the compounds.

MR. J. E. ADDERSON asked if Mr. Laycock had any knowledge of the origin of the alcohols and mentioned the possibility of mixed compounds that, after bromination, gave rise to unusual peaks. Mr. Laycock said they had not obtained reference samples, though it would be possible to obtain a further series of compounds.

PROFESSOR BECKET wanted to know if a fairly constant ratio was obtained between amine and olefine. He was told that a rise of temperature caused the ratio to vary. PROFESSOR BECKETT: If you keep the temperature constant then can you get a constant ratio?—Yes.

When Professor Beckett asked what the relative time for the C₁₈ tertiary amines Mr. Laycock said that, with the reference samples used, C₁₀ to C₁₈, it was difficult to compress to a single trace. The results seemed to follow a linear relationship. He told Dr. Foster he had no information about benzal-konium. Dr. W. MITCHELL, closing the discussion, recalled that the author had suggested that the ratio was disturbed at higher temperatures. Which was increased—the amine or the olefine? The reply was that the proportion was variable, but the olefine was the higher.

MR. F. BAILEY then presented a paper on

FLUOCINOLONE ACETONIDE – Determination in formulated products

F. BAILEY, A. HOLBROOK and R. J. MILLER

(Pharmaceutical department, Pharmaceuticals Division, Imperial Chemical Industries, Ltd.)

APPLYING established corticosteroid assay techniques to preparations con-

taining fluocinolone acetonide has been found difficult owing to their low steroid content, the complexity of the formulation and, in some instances, the presence of antibiotics. In a chromatographic procedure devised by the authors for determining fluocinolone acetonide a hexane: dioxan: water partition system is supported on celite. The progress of the chromatogram is followed by measuring the ultra-violet absorption of eluate fractions at $238 \text{ m}\mu$. The method has enabled fluocinolone acetonide to be determined in cream, ointment and lotion formulations and successfully applied to samples of other anti-inflammatory corticosteroids.

Dr. D. C. Garratt, Nottingham, asked whether, as E (extinction) values were non-specific, and steroid esters easily hydrolysed, it was not possible that both the acetonide that had been put into a preparation and the parent compound might be determined. Mr. BAILEY said the results given were not E values but optical densities, but once a batch had been stabilised there was little variation in E value. He pointed out that small differences in molecular structure would give a fairly large PROFESSOR M. DONBROW, Israel, who asked why polarographic methods of assay had been found unsatisfactory, was told that it took about a 1-gm. sample to produce 100 µgm. of steroid. It was difficult to put such an amount into a polarograph cell. Mr. BAILEY told Dr. Foster that nothing that might interfere with the assay was known in ointments or lotions, but creams could cause difficulty owing to the presence of dispersing agents, etc. Mr. C. A. Johnson, London, pointed out that it was not uncommon to find up to 4 per cent. foreign material in a steroid, yet all the curves shown appeared to be those of single substances. Would Mr. Bailey expect to be able to use the method for demonstraing the presence of impurities, as the results would suggest that impurities were not being removed? He was told that the sensitivity of the method depended on the spectrophotometer used. Dr. Rapson, London, asked whether there was any correlation between the breakthrough volume variation of the steroid in the various solvent mixtures used and its solubility in those mixtures. The reply was that the method had not been looked at from that point of view, but he would tentatively suggest that to be so.

The next paper was read by MR. C.

NEOMYCIN - Semiquantitative assay of neamine and neomycin C by thin-layer chromatography

C. VICKERS (Standards department, Boots Pure Drug Co., Ltd.)

THIN-layer chromatographic methods are described for the separation and assay of neamine (a comparatively inactive degradation product of neomycins) and neomycin C (a less active stereoisomer of neomycin B) in neomycin sulphate and its preparations. The samples are chromatographed on binder-free silica gel plates using as

developing solvents a 3.85 per cent. w/v ammonium acetate solution to separate neamine from the neomycins and a 3'4 per cent. w/v ammonium hydroxide solution to separate neomycin C from neomycin B and neamine. Spots are made visible by spraying first with 1 per cent. t-butyl hypochlorite in dichloroethane-acetic acid (9:1), then with 0.5 per cent. w/v potassium iodide in 0.5 per cent. w/v starch mucilage. Size and intensity of the spots is compared with stan-The systems have also been

applied to paromomycin.

DR. H. D. C. RAPSON, London, asked if the author had tried correlation with the relative Rf value. The packing of thin-layer material was critical. The variation of the Rf value. in mixtures could be explained on the basis of a study of the adsorption isotherms and partition coefficients

relevant to the system.
DR. F. FISH, Glasgow, asked if the work had been done at room temperatures. Temperature was significant. He thought the work might be repeated at varying temperatures. The Authors said he did not consider temperature a critical factor. What was necessary was to ensure ammonia saturation in the tank. He told Dr. Foster that he had examined international standard neomycin and had not found it to be typical of the composition of commercial material.

The last paper of the session was presented by MR. J. S. WRAGG.

SACCHARIN AND SODIUM SACCHARIN-A rapid method for the estimation of impurities

R. E. KING and J. S. WRAGG (Standards department, Boots Pure Drug Co., Ltd.)

A PROCEDURE is described for the detection and estimation of o-toluenesulphonamide, saccharin-o-toluenesulphonylimide, toluene-2.4-disulphonamide, saccharin-4-sulphonamide, o-sulphamoylbenzoic acid, p-sulphamoylbenzoic acid and benzoic acid in saccharin and sodium saccharin using thin-layer chromatography on Kieselgel GF:54. The solvent system used is chloroformmethanol-strong ammonia solution (100:50:11:5). Compounds containing a free sulphonamide group are detected by an "N-chloro" reaction, while the other compounds are detected by examining the chromatogram in ultra-violet light (253.7mµ). Impurities in commercial saccharin and sodium saccharin are estimated by comparison on the chromatogram with standards containing purified saccharin or sodium saccharin and suitable amounts of the impurities.

Replying to a question by Professor A. R. ROGERS, Edinburgh, Mr. WRAGG said they had not detected decomposition in the saccharin or sodium saccharin; the impurities emanated from manufacture. Dr. R. DE ZEAUS, Groningen, Holland, asked about the type of chambers used, and whether the amount of ammonia in the solvent was critical. Mr. Wragg said Shannon apparatus had been used. The amount of ammonia was not highly critical. Mr. D. O. SINGLETON, Crawley, made an appeal for precise statements of content in references to ammonia solutions. Mr. C. A. JOHNSON said that if the method were suggested for adoption for the Pharmacopoeia, it would be necessary to supply reference standards: a problem that delayed the introduction of more thin-layer chromatographic techniques into the Pharmacopoeia.

Section B

Session B. under the chairmanship of Professor Shorton, attracted nearly 100 participants. First contribution, a short communication intro-duced by Mr. I. Boyd, was his first Conference paper.

FREEZE-DRIED preparations of Penicillium

I. BOYD and K. BULLOCK

(School of pharmacy, Sunderland, and pharmacy department, Manchester

University)

By a freeze-drying process the authors have obtained powders containing mould spores in even distribution and suitable for use in studying the survival of such spores in the dry state. The procedure involved culturing spores of *Penicillium spinulosum* strain 42237 C.M.I. on malt-extract agar plates, preparing a suspension of the spores in sterile water (discarding large clumps), and filtering. The final suspension contained about 85 per cent. single spores. In the drying process, spore suspension was added to an aqueous 10 per cent. kaolin suspension and frozen in a solid carbon dioxide/ acetone mixture and finally dried over phosphorus pentoxide. When the phosphorus pentoxide. When the material was stored at 5°C, the variable count remained constant for up to 40 days. Above that level the spores died off with increasing rapidity as the temperature rose. Attempts to prepare spore-containing powders of peptone, malt extract and sodium chloride were

less satisfactory.

Dr. W. R. L. Brown, London, asked whether the author had measured the residual water content of the powders in case that might explain the differing survival levels. He was told that the content, which had been determined by drying at 105°, was greater in the malt extract and peptone powders (about 1 per cent.) than in the kaolin and sodium chloride (about 0.5 per cent.) MR. BOYD, replying to Dr. A. TALLENTIRE, Manchester, said they had not tried storing the powders in anoxia. Rehydration had simply been by adding water and therefore rapid. Dr. H. S. Bean, London, spoke of his own, less successful, attempts to prepare similar powders. He had found that viability on storage depended upon the level of organisms in the powder. Dr. V. Walters, London, was told that the work had not been extended to more lipophilic organisms. His co-author. Professor BULLOCK, emphasised that the report was of initial experiments. They were lucky to have achieved even distribution, and that was because kaolin had been chosen as a substance on which to dry. There remained the problem of increasingly variable viability on standing. Mr. A. Axon, Dartford, was told by Mr. BOYD that how long the

spores would live in an aqueous medium was not known, but germination was rapid if the medium was one in which they would germinate. They would germinate in the tap water of Manchester, but not in that of the North-east.

Second contribution was another "first" short communication. It was presented by Mr. R. HAMBLETON.

GERMINATION RATE of Bacillus megaterium

R. HAMBLETON and R. J. RIGBY (Pharmacy department, Manchester University)

RATE of loss of refractility and rate of loss of heat resistance are among commonly accepted criteria of bacterial spore germination. The authors compared the two factors (observing the former by phase-contrast microscopy) for a population of Bacillus megaterium spores in order to test a suggestion that the changes occur simultaneously. Counts of refractile and non-refractile spores were made during incubation at 37°C on a heated microscope stage (method 1), and at intervals during incubation in broth (method 2). Loss of heat resistance was examined by incubating spores in broth and at intervals heating a sample at 80°C for 10 minutes to destroy organisms that had lost that degree of resistance. The samples were then plated and colonies counted. Results suggest that the two phenomena in the spores that were examined did not occur simultaneously.

Mr. Hambleton said the authors felt justified in using a change in refrac-Brown, Bristol, who said it seemed that about 5 per cent. of the spores failed to lose their refractility. Might not that fraction, though only a small percentage, play a larger part than their numbers would suggest? During heating some spores were being activated, while others were dying off, so that what was measured by the colony count was complicated. Mr. HAMBLETON replied that the "5 per cent." was "very rough," and that occasionally nearly 100 per cent. of the spores became phase-dark. If the spores could be left longer on the agar they might all go, but growth tended to obliterate further observation. He reminded Dr. Brown that the spores had already had one heat shock at 80°. Dr. N. D. HARRIS, London, pointed out that, although heat increased germination of spores, it also caused damage. THE AUTHOR replied that, in choosing the heat shock, a suspension had been heated for over two hours without apparently damaging the spores. Dr. QUESNEL, Manchester, asked whether the finding had been checked over a period, as it had been found that heat resistance depended upon the duration of storage. Mr. HAMBLETON replied that that was based on survivals, but it was questionable whether every spore would produce a colony. That was part of the reason for the work.

Next came a paper presented by Dr. N. D. Harris.

VIABILITY OF BACTERIA damaged by x-rays, phenol and radiomimetic agents: effects of the addition of manganese dioxide to media

N. D. HARRIS and M. WHITEFIELD (Department of pharmacy, Chelsea College of Science and Technology, University of London)

It is known that manganese dioxide is capable of initiating the breakdown of peroxide in media. Its inclusion therefore affords protection towards catalase-negative organisms, but reports have differed on whether a protective effect is afforded to phenol-



Dr. N. D. Harris reading his paper on the effects upon viability of damaged bacteria of adding manganese dioxide to the medium.

treated E. coli. The authors have counted on agar two strains of E.coli, before and after damage by phenol, x-rays and radiomimetic sustances. The agar was treated in various ways with manganese dioxide, including a method described by Board, in which MnO₂ was in a layer superimposed upon the normal nutrient agar. After some treatments the medium gave increased counts with cells damaged by phenol and dimethylbusulphan and with undamaged cells, the strains responded rather differently from one another. The beneficial effect was found (by induction of peroxide formation in the media by ultra violet radiation) not to be due to the breakdown of peroxides by the MnO2, and may, it is suggested, be due to adsorption of toxic substances from the

medium.

TALLENTIRE contested validity of the irradation work, saying that the authors were using a "singlethat the authors were using a "single-point" survival on the graph log survivors/dose, which could produce various types of curve. Dr. HARRIS contended, however, that in their work they had obtained curves that were approximately exponential, and anyway the observations were not affected by the shape of the curve. He told PROFESSOR A. M. COOK, London, that different batches of granule had not been tried. 'We were trying to avoid that type of variation of response, said. Dr. HARRIS also mentioned that an alternative and interesting explanation for the results was that, in some circumstances, the conditions for rapid growth were made harder. It had been shown that, if organisms were grown at their optimum, some would die, but if they were retarded the nutrients were allowed to get into proper phase. Dr. WALTERS asked if there were any indication what type of toxic material

might be absorbed. He was told that that explanation was in any case hypothetical. It seemed there was no tie-up with variations in heavy-metal content and though the authors had followed up a suggestion that fatty acids might be involved (by extracting with solvents), no definite trends could be established.

Following the tea interval Mr. H. R. HIBBERT presented the following short communication.

SIZING Bacillus megaterium SPORE POPULA-TIONS as a basis for studying their viability

H. R. HIBBERT and A. TALLENTIRE (Department of pharmacy, University of Manchester)

GERMINATION of bacterial spores, commonly taken as a criterion of their viability, is accompanied by an increase in cell volume. If the change were sufficiently large, it could be followed by means of a Coulter counter so as to enumerate either germinated spores or unchanged spores and hence to yield an estimate of the viability of the original population. The authors have used a model B Coulter counter to examine volume distributions of particles in suspensions of Bacillus megaterium spores, both resting and after incubation. Results indicate that the numbers of inactive spores in suspension may be estimated by counting cells within the volume range 0.26 to $0.88\mu^3$ after incubation in a suitable medium. The counter may further be used to count unchanged B. megaterium spores in the presence of germinated spores, while the absence of change in cell volume on incubation can probably be used as a criterion of cell inactivation.

Mr. M. S. PARKER, Strathclyde, said he was doing work on similar lines using B. subtilis, and would have exusing B. statistis, and would have expected smaller spores than those of B. megaterium. However, their figure was about $0.6\mu^3$ against about $0.4\mu^3$ found by the authors. Was that an instrumental variation? MR. HIBBERT suggested that the calibration of Mr. Parker's machine was in error, and PROFESSOR SHOTTON suggested the groups should exchange spores! also asked how the authors ensured that the spores did not aggregate, and was told that microscopic examination showed the spores to be discrete, while the flow through the orifice would put a stop to any aggregation of

the spores.



Dr. W. R. L. Brown poses a question to a speaker during the science session in the Roscoe buildings.

255

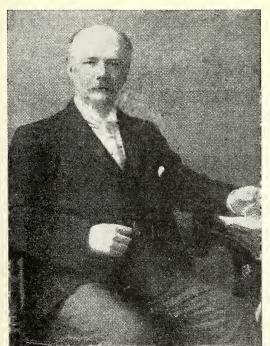
A History of the

BRITISH PHARMACEUTICAL CONFERENCE by E. H. Shields

The Years 1903 and 1904

N handing over to his successor in the chair of the Conference, Mr. Claridge Druce had suggested that Mr. T. H. W. Idris "possessed the Midas touch". One can well believe it after seeing the portrait that C. & D. published of Mr. Idris. The owner of such a magnificent fur coat could not be other than prosperous. Mr. Idris was indeed the successful man of business, long separated from his life behind the counter but fully alive to its current problems. Before entering upon his manufacturing career he had had a varied experience of pharmacy as apprentice, student, demonstrator (to Dr. H. E. Armstrong, whose young men learned a lot), assistant, locum, proprietor — all as Mr. Williams. His aeratedwater business began in a small way behind the shop and developed rapidly. A chance encounter whilst he was on holiday in France introduced him to an early version of the syphon idea, and he seized upon it with such enthusiasm that it marked a turning-point that led to fortune and a change of name. Perhaps, therefore, the pictures of the evolving syphon are of still greater significance than that of the fur coat.

Certainly Mr. Idris made an excellent president. The main theme of his opening address was the urgent need to separate dispensing from prescribing. Chemist-prescribers and doctor-dispensers were both fundamentally wrong, and he looked forward to the day when it would be unthinkable to double those functions in one person. Some lurid instances of crimes and mistakes, gathered from the previous half-century, were followed by a detailed review of thirty-one cases reported between 1898 and 1903. Earlier Mr. Idris had dealt with essential oils, still too



Mr. A. H. Allen, F.I.C., F.C.S., city analyst of Sheffield from 1873, an honorary member of the Sheffield Pharmaceutical and Chemical Society, and author of "Commercial Organic Analysis."



Mr. Thomas Howell Williams Idris, J.P., F.C.S., chairman of the Conference, 1903.

often sophisticated. "Time was when adulteration was very coarse and very frequent. It is still frequent but it is now not so coarse". Recent work by Parry, Umney and Bennett, all fellow-members, in exposing such practices and suggesting reasonable standards, gave hope for the future.

The Conference, in returning to Bristol, was going back to its source, as Dr. Attfield indicated in apologising for his enforced absence. The letter is noteworthy as pinpointing the original suggestion of an annual "peripatetic meeting"; it was made by Mr. Schacht on Monday evening, August 9, 1852, at a gathering of the Bristol and Clifton chemists and druggists. Jacob Bell attended, primarily in order to explain the provisions of the new Pharmacy Act; he strongly supported the Conference idea but, of course, eleven years had passed before it had become practicable.

The Executive Committee reported with regret the resignation of Mr. F. Ransom as senior general secretary; Mr. Saville Peck had taken his place, with Mr. Edmund White as his partner and Mr. J. Hearn as assistant. The treasurer (Mr. J. C. Umney), presented a rather less doleful financial statement, and ventured to hope that another year might see the Conference paying its way. Dr. F. B. Power had attended the International Congress of Applied Chemistry in Berlin and he and his colleague, Mr. Peter MacEwan, had each been invited to take the chair at certain sessions. Lantern slides of the new Pharmaceutical Institute of Berlin University excited admiration and more than a touch of envy. Dr. Symes and Mr. Tyrer took good care to remind the authorities at Bloomsbury Square that they, too, should follow suit and provide a well equipped laboratory for practical pharmacy. Mr. Edmund

White and his colleague Mr. Rodwell were working through the official pills at St. Thomas's Hospital, with a view to their presentation as compressed tablets, which they considered much more elegant. The audience, pill-makers to a man, were sceptical. Would the tablets disintegrate? Mr. White assured them that they would if properly made and that, if a more explosive effect was required, a little starch would do the trick (thus letting out something of a trade secret). But coloured tablets, Mr. White was told, always came out in spots! Maybe, he replied unabashed, but he rather liked the speckled effect. "I would boast about it, just as anybody who would produce cloudy household ammonia instead of filtering it boasted about it." Much of Mr. Leo Atkinson's paper on the future of pharmacy could have been delivered at the Royal Albert Hall about sixty years later, with the parent Society trying to do the work of his suggested "Guild" and seeking "disciplinary regulations and the machinery for controlling and maintaining internal integrity." Mr. Wippell Gadd wanted apprenticeship and a curriculum to go hand in hand on a much wider scale; the usual hurried few months at college later did not provide the necessary thorough, prolonged training. "Concentrated education is as delusive as concentrated food.'

Botanical Specimens Unknown Elsewhere

An attractive picture of the Balearic Islands in their natural state was presented by Mr. J. W. White, who had spent his Easter vacation with a fellow botanist as systematic as himself. To gather plants at that early season meant going as far South as possible. Their books had shown that the Balearic Islands possessed more endemic species per sq. kilometre than either Corsica or Sicily. Forty species were known to grow in only one other country and fifty were unknown elsewhere in the world. The two botanists went via Paris and Barcelona (which meant twenty-four hours in the train) and it was useful to note that an English sovereign was worth an extra peseta in Barcelona or Palma as compared with London. The sole tinge of sadness "pertaining to his recollections" was caused by the rolling of the small boat that took them overnight from Barcelona to Port Mahon. Before landing,

Mr. Edmund White, B.Sc., who was elected Conference secretary at the Bristol meeting in 1903. At that meeting he had presented a paper on the presentation of the official pills as compressed tablets.

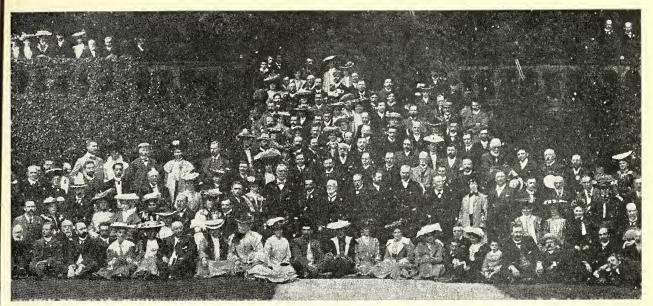


Mr. White saw the graves of British soldiers for whose loss, and that of the forts they defended, Admiral Byng was condemned and shot. Minorca is described as a solid mass of stone; its exposed surfaces tended to weather in a curious way into sharp, knife-like ridges. Loose fragments lay in profusion, and it was no wonder that the ancient Baleares were "the champion slingers of the world." The botanical picture was very different from our own, though Mr. White noticed hawthorn, flowering in April, buckthorn, a large nettle, some docks and "oddly enough, the whole six Balearic geraneums are common British plants. In all else, no vegetation could be more unlike." There was no pasture, and few of the grasses that make our English hay, no milch cows, no butter. Breakfast consisted of a light, rich bun, ensiamada, "more easily eaten than described. It is slightly indigestible and, with coffee or chocolate, stands by one well until the midday meal.'

Majorca, much larger and more fertile, was a veritable paradise, to be praised from every point of view and left with great regret. As for the people, they were "friendly, simple, good natured, anxious to please... They do not know the American or English tourist; no preparation has been made for him and no one speaks his language. Who shall say that his coming is greatly to be desired?" Now



EVOLUTION OF THE SODA-WATER SYPHON: First left, a stoneware syphon vase introduced by Mayo & Warrington in the 1840's and patented in 1843; second, a model with improved lever (subject of a Scottish patent of 1844) and standing in an unglazed cooler. Next, three early glass syphons. Right, the "perfect" syphon introduced by Mr. Idris. The syphon-head, modelled on a pure tin head Mr. Idris found in Paris (at that time the syphon-heads in Britain contained lead), aroused his interest and he secured the rights for England in return for a £1000 order from the Paris maker.



Members photographed at Haddon Hall on August 11, 1904, during the Sheffield meeting of the Conference.

that air travel has apparently brought the islands so much nearer it is to be hoped that the countless tourists have not changed the picture too much.

Several papers, including a timely warning from Mr. E. M. Holmes that modern agricultural and horticultural poisons were upsetting the balance of nature, had to be taken as read. In the final business session Sheffield was chosen as the meeting place for 1904, with Mr. Idris again in the chair, and Mr. Ransom was cordially thanked for his services as secretary over the past thirteen years.

Quiet Start

The Sheffield Conference began sedately enough with the usual courtesies and compliments. Mr. Newsholme, deputising for the principal of University College, said that pharmacists were hoping to achieve full university status in the near future. Mr. Idris referred to their sad loss in the death of Mr. A. H. Allen, the city analyst and author of fifteen Conference papers as well as of the standard work on commercial organic analysis. Other departed worthies included Barnard Proctor, one of their founders and reader of the first paper at Newcastle upon Tyne, John Barclay of Birmingham and Elias Bremridge, "the honoured and venerable ex-Secretary and Registrar of the Pharmaceutical Society." After apologising for not being able to give a complete account of pharmacy during the previous year Mr. Newsholme still managed to cover a wide field, dealing with the Conference formulary, the chemistry of essential oils, the adoption of the metric system (only a matter of time — had not one well-known firm recently arranged its sports programme on a metric basis?), pharmacy legislation (the opponents of qualified ownership were becoming increasingly active); poisons legislation (free trade in agri/horticultural poisons was a public menace but it was supported by powerful interests); the separation of dispensing and prescribing — bringing up to date all he had urged in 1903.

The president of the Pharmaceutical Society, who proposed a vote of thanks to Mr. Idris, also alluded to the formulary and emphasised the friendly nature of the discussions between the Society's newly formed Compendium Committee and the Conference Executive during the year. Mr. N. H. Martin said that he was grateful for the kind words spoken about the work of his Formulary Committee. So far, all was sweetness and light. Perhaps the first hint of the gathering storm followed the reception of delegates, when Mr. Martin asked a rather awkward question "Are all the delegates members?" The president

had always taken it for granted that they must be, but promised early investigation. Mr. Edmund White presented the report of the Executive Committee, which included a "special general meeting" of Conference members at Bloomsbury Square, a summary of meetings with the Society's Committee, and an offer by the Council of an "honorarium" of 70 guineas "in respect of the material now in the hands of the Formulary Committee." This had the full approval of the Conference Executive and the treasurer (Mr. J. C. Umney) was only too pleased with the prospect of such a bonus for his meagre funds. Mr. Martin then read the report of the Formulary Committee itself, traversing what was by that time familiar ground, and placed the matter before the Conference for its decision.

Acceptance of the offer was formally proposed by Mr. Umney and seconded by Mr. Bird. The acknowledged father of the formulary (Dr. Symes) supported the motion, though with some reluctance. Mr. Martin then rose to move his amendment. He recognised that they were all in one family of pharmacy. Bloomsbury Square was still their Mecca, "although the walls were broken down and thistles grew where they looked for fruit" . . . Mr. Carteighe, author of the compendium scheme, was a personal



Sheffield Guardians' Dispensary. At right is Mr. H. Anteliffe, local secretary of the Conference in 1904.

friend of thirty years' standing, and it was painful to have differences in matters of public policy, but he felt it his duty to move that "The Pharmaceutical Conference having carefully considered the offer by the Council of the Pharmaceutical Society of an honorarium of seventy guineas to give up its rights in the Conference formulary, begs to decline the same, in order that the Conference may remain free to pursue any course it may deem best for pharmacy."

Then the sparks began to fly. Members of the Formulary Committee, past and present, were compared with those of the Compendium Committee, greatly to the disadvantage of the latter. Mr. Martin said he had hunted through the index to the year-books and counted the number of papers contributed by each side. What a contrast — about 100 to five! The debate, or monologue, went on until the luncheon interval, and most of the afternoon session was occupied in tossing the ball to and fro. Mr. Idris made a good referee, though obviously in favour of the original motion, and he was again well supported by the Society's president (Mr. R. A. Robinson). The Society was not anxious to press 70 guineas into the reluctant hands of the Conference if members did not want it.

The actual amount was considered reasonable by both presidents when they met in friendly fashion over a cup of tea at a royal garden party. Yes, they had actually preferred to talk pharmacy rather than be presented to the Prince and Princess of Wales! Mr. John Humphrey claimed to be the only person in Sheffield who knew the whole truth of the matter but left without voting. Mr. Glyn-Jones loved to argue — it was his nature to do so, said Dr. Symes — and he was given plenty of scope. Mr.

Tocher thought that Dr. Symes was trying to sit on two stools and must be highly uncomfortable. Mr. Robinson described Mr. Martin's attitude as absurdly and ridiculously unfair . . . and so it went on until Mr. Idris, after allowing perhaps too much overtime in order that the opposition should have its say, put the amendment to the meeting. It was defeated by forty-three votes to twenty-one. The motion agreeing to the "honorarium" was then passed by forty-one to nineteen. The Society wanted the formulary, the Conference needed the money. One sees the result as a first short step to integration. (The voting figures should not be taken as an indication of poor attendance. Actually 191 visitors were registered.)

Home-grown

After all the excitement of a family row, the temperature was reduced to normal by Messrs Farr and Wright in a paper on standardising powdered alcoholic extracts, and it is pleasant to think of Mr. Gowen Cross of Shrewsbury contributing to their research with hyoscyamus grown in his own garden. Mr. Peter MacEwan tried to pin the reader down to annual or biennial plants as preferable, but Mr. Wright declined to be dogmatic; with a twinkle in his eye he said it must be awkward to argue with a man who was always "Wright." On the morrow too, the atmosphere was cordial and relaxed; Mr. Martin and other contestants joined in the brief discussions they had to be brief to make up for lost time — and Mr. F. Ransom was presented with a desk and a watch and many verbal tributes in recognition of his long secretarial services. Each visitor received a tiny silver mortar and pestle as a souvenir from the Local Committee (a miniature of an old bell mortar belonging to Mr. John Austen).

MEDICAL RESEARCH COUNCIL

Twelve months' activities reviewed

THE year ended March 31 saw building work begin on the project for a combined district hospital and clinical research centre at Northwesk Park in north-west London, states the annual report of the Medical Research Council, recently published.

The project results from the realisation that further progress in clinical research would depend increasingly on collaboration between different disciplines such as could be brought about only by a deliberate concentration of clinical and para-clinical workers in one centre. It is believed that by combining a research centre and a hospital, patients will benefit from the latest advances in medical science and from the special facilities of the research centre, while research workers will be in direct contact with everyday clinical problems.

Basic Discoveries

Many basic discoveries made by members of the laboratory of molecular biology have thrown light on the structure and replication of nucleic acids and on the structure and function of proteins. Great interest has been aroused by the discovery of a possible biochemical mechanism for initiation of the synthesis of a protein chain and by the finding that certain "code words" among the triplets of nucleotides bring synthesis to a halt. One of the code words for the "full stop" is "misunderstood" by certain mutant bacteria, which take it to mean the continuation of synthesis instead. On

the physical side it is now possible to take x-ray diffraction photographs during a series of active muscle contractions. The new photographs suggest that in actively contracting muscle the protein cross-bridges move or oscillate like ratchets, attaching themselves to the actin filaments and displacing them lengthways so that they slide past the myosin filaments of the muscle.

Cancer Research

In the field of cancer therapy the mutagenesis research unit has obtained evidence that the great superiority of polyfunctional over monofunctional alkylating agents may be due to the fact that, in chromosomes treated with the former but not with the latter type of agent, large numbers of breaks continue to occur for many days after cessation of treatment.

It may be possible preferentially to increase the frequencies of certain types of mutation by manipulating the secondary steps in the mutation process. The unit has obtained evidence that supports this idea: a highly desirable possibility in 'mutation' breeding

supports this idea: a highly desirable possibility in 'mutation' breeding.

The epidemiological research unit (South Wales) whose techniques were originally developed for investigations into pulmonary disease, in particular pneumoconiosis, is at present undertaking a number of haematological studies: preliminary investigations confirm that iron deficiency anaemia is prevalent in women over 15 and in men over 60. Two studies aimed at the prevention of that condition are being

carried out. In the first the effect of various daily supplementary doses of elemental iron is being investigated in a group of 750 Cardiff schoolgirls; in the second the absorption of iron from the small quantities normally added to the white flour in bread is being investigated.

Electrolytes and Depression

From the studies on the distribution of water and electrolytes in the tissues the neuropsychiatric research unit has found that some people who are subject to severe depression may differ constitutionally from normal individuals in their distribution of sodium and potassium. Lithium salts (used in the treatment of mania to reduce excitability and euphoria) have been found to produce a change in the sodium distribution similar to that observed in depression. A controlled clinical trial has shown that the efficacy of monoamine oxidase inhibitors is greatly increased by simultaneous administration of the naturally occurring amino acid tryptophan. It is suggested that the course of a depressive illness can possibly be influenced by amines derived from tryptophan.

In studies on animals it has been found that the start of functional activity in the developing brain is associated with considerable changes in the metabolism of amino acids and in the activity of certain enzyme systems.

During the year the Council set up three new research units. The reproduction and growth research unit at the Princess Mary maternity hospital, Newcastle upon Tyne, is extending the work on human reproduction and growth with which the disbanded ob-stretic medicine research unit at Aberdeen was concerned.

The medical sociology research unit in the department of sociology, University of Aberdeen, will be particularly concerned with the interactions between medical and social factors in reproduc-

tion and child development.

The cardiovascular research group at the Postgraduate Medical School of London, Hammersmith Hospital, was reconstituted during the year as the cardiovascular research unit. Special emphasis is being placed on research into the intensive care of patients after coronary thrombosis, the haemodyna-mic changes that take place in cardiovascular disease, and methods of improving diagnosis and treatment.

Since the realisation, more than a hundred years ago, that man has at least two different haemoglobins, one forming the major component at birth and called foetal haemoglobin (Hb F) disappearing fairly early in infancy, to be replaced by adult haemoglobin (Hb A), about three dozen variants of the haemoglobin molecule have been discovered and about twenty-five less common variants were subsequently discovered. An example is Hb Zurich. In that haemoglobin one of the two histidine residues of the B-chain to which the haem group is linked is replaced by an arginine residue. The haemoglobin functions normally, but is much less stable than Hb A. If carriers of Hb Zurich receive a single dose of sulphonamide the haemoglobin is oxidized to methaemoglobin and loses its oxygen-carrying capacity and that results in cyanosis (in normal individuals it only happens after prolonged sulphonamide therapy). In addition the haemoglobin will precipitate inside the cells and form inclusion (Heinz) bodies.

A rapid elimination of those cells in the spleen will then give rise to a hae-molytic crisis. The response of such patients to sulphonamide is a typical example of a genetically determined drug sensitivity. Other genetically determined changes occurring in this region of the polypeptide chain similarly cause oxidation of the ferrous atom of the haemoglobin to the ferric state and thus make the molecule unable to carry oxygen.

New Knowledge of the Thymus

New knowledge of the physiology of the thymus has brought closer understanding of certain clinical and experimental states of immunological deficiency and autoimmunity and is throwing light on mechanisms relevant to the development of cancer. The thymus in man is an irregular bilobed organ, lying behind the upper part of the breast bone and extending for a short distance into the neck. It is a relatively large organ in the infant, and it reaches its maximum size at about the time of puberty, after which it regresses. The thymus forms part of the lymphoid system but although immune responses have for long been known to be a function of the lymphoid system it is only recently that direct,

unequivocal evidence has been obtained that the small lymphocyte produced by the thymus is an immunologically competent cell. However, those immunologically competent small lymphocytes do not normally circulate through the thymus in adult life. Moreover few, if any, of the small lymphocytes of the thymus can initiate transplantation immune reactions when stimulated by the presence of foreign tissue. Recent work, however, has shown that the thymus has a role of fundamental importance in the development and maintenance of an adequate pool of immunologically competent cells. The capacity of thymectomised new-born mice for immune response, was tested and found to be deficient, and at the National Institute for Medical Research and the Imperial Cancer Re-Research Funds laboratories, it was shown that their capacity for synthesising antibodies was reduced in a few foreign antigens but not in others.

Environmental Factors

The wasting disease that occurs in some strains of mice thymectomised at birth does not develop when the animals are kept germ-free under sterile conditions, suggesting that the disease is precipitated by environmental factors, probably infections. Implanta-tion of thymus tissue just beneath the skin or on the kidney can also correct the immunological defects of thymecto-

mised mice, only the epithelial cells of thymus tissue being essential for that correction. Strong evidence that a thymus implant acts not only by directly providing cells to the host but also by inducing the differentiation of the host's lymphoid precursor cells into small lymphocytes with full immunological competence has been obtained.

The new work on the thymus has focussed attention on human diseases in which immunological abnormalities are associated with some pathological condition of the thymus. It is suggested that the possibility of treating some thymic deficiency syndromes by grafting normal thymus tissue ought to be carefully explored and that the extraction and purification of the biologically active thymus fraction might make its use in clinical practice pos-

Implications in Cancer Research

The work also has implications for cancer research in that, as antigenic differences exist in many cases between normal and cancer cells, anything that would enable the immunological system to discriminate between cells of normal and altered antigenic consti-tution could be beneficial. What is re-quired is a factor that produces "the converse of the effect of cortisone in damping down immunological reactivity" (Burnet 1957). A logical place to look for such a factor is in the thymus.

NEW COMPANIES

P.C.=Private Company, R.O. = Registered Office.

BOOTS, LTD. (P.C.) - Capital £100. To carry on the business of manufacturers of and dealers in chemicals, etc. The first directors are not named. R.O.: 37 Station Street, Nottingham.

J. BUSBY (HARPENDEN), LTD. (P.C.) -Capital £6,000. To enter into an agreement with J. Busby, Ltd., and to carry on business of manufacturing, analytical, consulting, and general chemists and opticians, etc. Directors: Wilfred J. Busby and Daniel Carlin, M.P.S. R.O. 19 High Street, Harpenden, Herts.

CAMBRIDGE MEDICAL INSTRUMENTS LTD. (P.C.).—Capital £100: To carry on the business of manufacturers of and dealers in scientific instruments and apparatus, etc. Directors: Erasmus D. Barlow and Leslie F. Cooke. Solicitors: E. F. Turner & Sons, 66 Queen Street, London, E.C.4.

CORDOBES PRODUCTS, LTD. Capital £100. To carry on the business of chemists, druggists, etc. Subscribers: Stanley H. Davis and David Ordish. R.O.: Warstone Lane, Birmingham, 5

FIRM OF KIEHL, LTD. (P.C.). - Capital £100. To carry on the business of manufacturers of and dealers in perfumes, cosmetics, etc. Directors: Aaron Morse (American), and Irving Morse (American) R.O.: 51 Mount Street, London, W.1.

HEATHE BROOK PHARMACY (NEW-BOLD VERDON), LTD. (P.C.). — Capital £2,000, To carry on the business of dispensing, photographic and advising chemists and druggists, etc. Directors: Carl N. Bedford, Julia C. Bedford, M.P.S., Kenneth Bromley, Margaret R. Cross. R.O.; Corridor Chambers, Market Place, Leicester.

NATIONSTENT, LTD. (P.C.). £100. To carry on the business of chemists, etc. Subscribers: Jean Herbert and Thomas A. Herbert, 156 Strand, London, W.C.2.

SHELFIELD DRUG STORE LTD. (P.C.) Capital £100. To carry on the business of drug and general storekeepers, etc. Directors: Peter G. Holroyd, Marjorie J. Boot, Freda A. Hartshorne. R.O.: Spring Road, Shelfield, Staffs.

SPRINGVALE COSMETICS, LTD. (P.C.). - Capital £100. To carry on the business of manufacturing, exporting, importing and general chemists. Directors: Brian E. Roddick and Colin Rose. R.O.: 3 Spring Avenue, Egham, Surrey.

CONTEMPORARY **THEMES**

Subjects of contributions in current medical and technical publications.

AMPICILLIN for persistent typhoid excreters, including a clinical trial in convalescence.

Brit. med. J., September 3, p. 555.

LOMOTIL in treatment of post-vagotomy diarrhoea.

Brit. med. J., September 3,

p. 560.

ANALEPTICS and the resuscitation of asphyxiated monkeys. Brit. med. J., September 3, p. 562.

THE MALARIAL "CLOCK." New Scientist, September 1, p. 482.
VINCRISTINE SULPHA

SULPHATE, Reticulum-cell coma and. J. Amer. med. Ass., September 3, p. 535.

BARBITURATE DELIRIUM. Practitioner, September 3, p. 345.

DEXTROMORAMIDE. Dangers of in obstetrical analgesia. *Practitioner*, September 3, p. 348.

DRUG RESPONSES. Modification of by hydrolytic enzymes. *J. Pharm. Pharmacol.*, August, p. 561.

PRESERVATIVE ACTION, A basic model for the

evaluation and prediction of. J. Pharm. Pharmacol., August, p. 589.

A new excipient for chewable INOSITOL N.F. tablets. J. pharm. Sci., August, p. 794.
Antibiotic Quality Control. Application of

ANTIBIOTIC QUALITY CONTROL. Application of membrane filtration to sterility testing.
J. pharm. Sci., August, p. 818.

ANTIPERSPIRANTS AND DEODORANTS. Some problems relating to the efficacy of.
Essential Oil Record, August, p. 501.

GRAMICIDIN S. Molecular constitution of.
Nature, September 3, p. 1039.

TRADE REPORT

The prices given are those obtained by importers or manufacturers for bulk quantities or original packages. Various charges have to be added whereby values are augmented before wholesale dealers receive the goods into stock.

LONDON, SEPTEMBER 6: The firmer tone of American BOTANICALS was maintained during the week and a further advance in price was recorded for several items. They included WITCH HAZEL LEAVES for shipment (up threepence per lb.) and HYDRASTIS (by six-The first offers of pence for spot). 1966 CASCARA peel were received at 245s. cwt., c.i.f., which level was the same as last quotation for 1965 peel. As mentioned in earlier reports, the dry season and difficulties in getting labour to collect crops have been given as contributory causes for the present position. Jamaican Sarsaparilla was said to be unobtainable at origin; spot prices were up by one penny per lb. PERU BALSAM was again dearer by sixpence per lb. on the spot and by one shilling for shipment. Items which showed a fall during the week included Seychelles CINNAMON BARK (down 5s. cwt.) Alleppy green CARDAMOMS (down 2s. 6d. per lb.) Portuguese-Spanish ERGOT (down sixpence per lb.) and most Peppers. Madras Turmeric was quoted at 105s. per cwt. which showed a fall of 5s. per cwt. Although Costa Rican IPECACUANHA was lower by sixpence per lb. in both positions it was believed that offers from origin had become more difficult. The prices of Tinnevelly SENNA PODS now arriving reflect this year's shorter crop. ACACIA and TRAGACANTH GUMS were both sharply advanced.

Among ESSENTIAL OILS prices were reported at former levels with the exception of Madagascar CLOVE LEAF which was down by about fourpence per lb.

Pharmaceutical Chemicals

Where material is of foreign origin prices given below may be subject to import surcharge.

METHYL TESTOSTERONE.—Per kilo, £95.

PARALDEHYDE.—B.P. in 12-winchester lots, 2s. 10d. per lb. (6s. 3d. kilo); 10-gall. carboys, 2s. 4d.

PHENOL.—Ice crystals in bulk, 1s. 4d. per lb. LIQUID, B.P., 1s. 9d. per lb. in 56-lb. returnable tins.

POTASH SULPHURATED.—Lump, B.P.C.

1959, 8s. 2d. per kilo in 50-kilo drums.

POTASSIUM ACETATE.—(Per lb.) 1-cwt. lots, 3s.; 5-cwt., 2s. 8d.; 10-cwt. 2s. 6d.

POTASSIUM BICARBONATE.—B.P. powder, 110s. per cwt. 1-4-cwt. lots and 105s. per cwt. for 5-cwt. and over.

POTASSIUM CARBONATE.—50-kilo kegs, 6s. 1d. per kilo.

Potassium chlorate.—50-kilo cases, 5s. 6d. per kilo for crystals or powder.

POTASSIUM CHLORIDE.—Pure 50-kilo sacks, 3s. 7d. per kilo.

POTASSIUM HYDROXIDE.—Pellets, B.P., 9s. 6d. per kilo; sticks, 15s. 5d.; technical flake, 4s. All 50-kilo lots.

POTASSIUM 8-HYDROXYQUINOLINE SUL-PHATE.—1-kilo is 55s. per kilo.

Potassium metabisulphite.—In kegs, 50-kilos, 3s. 8d. per kilo.

POTASSIUM NITRATE.—Pure in 50-kilo sacks, 2s. 1d. per kilo.

POTASSIUM PERMANGANATE.—B.P. in 1-cwt. lots, 2s. 0\frac{3}{2}d. per lb. Technical 218s. 6d. per cwt.; 1-ton lots, quoted at 207s. per cwt.

POTASSIUM PHOSPHATE.—B.P.C. 1949, 50-kilo kegs of powder, 8s. 4d. per kilo, GRANULAR, 8s. 10d.

Potassium quadroxalate.—1-cwt. 3s. 6d. per lb.

POTASSIUM SULPHATE.—B.P.C. '49, 1s. 2d. per lb.

POTASSIUM THIOCYANATE.—50-kilo lots, 11s. 6d. per kilo in kegs.

Prednisolone. — Alcohol and acetate from 7s. per gm.

Prednisone.—One-kilo lots, alcohol and acetate, 6s. 6d. per gm.

PROGESTERONE.—Price is 1s. 3d. per gm. for 1-kilo lots.

QUININE.—British material in 1,000-oz. lots per oz.; sulphate, b.p., 1963, 21s. 7d.; bisulphate, 21s. 6d.; Dihydrochloride, 30s. 3d.; hydrochloride, 28s. 8d. alkaloid, 29s. 11d. and hydrobromide, 26s. 11d. 14s. per kilo in kegs.

Crude Drugs

AGAR.—Kobé No. 1, 23s. 6d. per lb. in bond; shipment, 23s. 6d., c.i.f.

ALOES.—(Per cwt.). Cape primes, spot, 245s.; shipment, 240s., c.i.f. and Curacao, 270s. spot shipment, 265s., c.i.f.

ANISE.—Chinese STAR, 150s. per cwt. spot, duty paid; f.a.q. for shipment, 120s., c.i.f.

BALSAMS.—(Per lb.): CANADA: Shipment, 27s. 6d., c.i.f.; spot, 27s. 6d. COPAIBA: B.P.C. spot, 13s.; shipment, 10s., c.i.f.; PERU: again dearer at 18s., spot: shipment, 17s. 6d., c.i.f.; TOLU: B.P., from 12s. 6d.

Buchu.—Spot, 8s. 6d. per lb. shipment cleared.

CAMPHOR. — B.P. powder for shipment, 4s. 4½d. per lb., c.i.f.; spot, 5s. 9d., duty paid.

CASCARA.—Spot, 245s. per cwt.; shipment, new peel offered at 245s., c.i.f.
CASSIA.—Lignea, whole for shipment, 230s.

cwt., c.i.f.; spot, 300s., duty paid.

CHERRY BARK.—Thin natural, on spot from 3s. 4d. per lb.; shipment 3s 3d. c.i.f.

CINNAMON.—BARK, Seychelles, 135s. cwt. spot; shipment, 107s. 6d., c.i.f.; QUILLS Ceylon (per lb., c.i.f.); Five O's, 10s. 3d.; firsts, 7s. 10d.; seconds, 7s. 8d.; quillings, 4s. 6d.

COCHINEAL. — (Per lb.). Canary Isle silver-grey, 15s. 6d. spot, 14s. 6d. c.i.f.; black brilliant, 17s. 6d., spot, 16s. 6d., c.i.f. Peruvian silver-grey, 13s., spot, and 12s. 6d., c.i.f.

Ergot.—Portuguese—Spanish, spot, 11s per lb.; shipment 10s. 6d., c.i.f., nominal. Continental, 9s., spot.

GINGER.—(Per cwt.). Nigerian split, 75s., spot; no c.i.f. offers.; peeled, 195s., spot and 170s., c.i.f. African, spot, 230s., shipment, 210s., c.i.f. Jamaican No. 3, spot, 260s., shipment, 225s., c.i.f.; Cochin, spot, 230s.; shipment, 197s. 6d., c.i.f.

Gum ACACIA.—Kordofan cleaned sorts, 182s. 6d. per cwt., spot; shipment, 169s., c.i.f.

HYDRASTIS.—Spot is 27s. 6d. with shipment offers at 27s., c.i.f.

IPECACUANHA.—Matto Grosso for shipment, 53s. 6d. per lb., c.i.f. and spot, 56s. Costa Rican 65s. 6d., spot; shipments, 62s., c.i.f. Colombian, shipment, 55s., c.i.f.

LIME FLOWERS.—Spot 2s. 2d. per lb.

PEPPER.—White Sarawak, 3s 9½d. lb. spot; shipment, 3s 8d., c.i.f. Black Sarawak, 3s 2d., spot; shipment, 2s 9½d., c.i.f. Brazilian grade one spot, 3s. 3d., duty paid. Black Malabar, spot not available; shipment, 335s. cwt., c.i.f.

SARSAPARILLA.—Jamaican native red, spot, 3s 9d. per lb.; shipment not offering.

SEEDS (Per cwt.). ANISE.—Spanish, 240s. Turkish, 187s. 6d. both duty paid. CARAWAY.—Dutch 157s. 6d., spot. CELERY.—Indian unchanged at 147s. 6d. spot.; shipment new crop for September-October, 135s., c.i.f. CORIANDER.—No Moroccan offering on spot; Rumanian whole seed, 82s 6d. and splits, 70s., both duty paid; shipment quoted at 89s., c.i.f. CUMIN.—Spot: Cyprian, 290s.; Indian, 292s. 6d., Moroccan, 290s., duty paid: shipment Cyprian 255s., c.i.f. DILL.—Indian, 115s., spot.; shipment, 80s., c.i.f. FENNEL.—Chinese, 125s., duty paid; shipment Chinese, 125s., duty paid; shipment Chinese, 110s., Indian, 122s. 6d., c.i.f. FENUGREEK.—Moroccan, 80s., duty paid sellers; shipment, 67s. 6d., c.i.f. MUSTARD.—English, 52s. 6d. to 90s., according to quality.

SENNA. — (Per lb. Tinnevelly LEAVES). spot; Prime No. 1, 2s. 3d.; No. 3, f.a.q., 1s. 2d. Shipment: No. 3, 1s. 0½d., c.i.f. PODS: Tinnevelly hand-picked now arriving quoted from 2s. to 2s. 3d.; manufacturing, 1s. 3d., shipment, 1s. 2d., c.i.f. Alexandria PODS: Hand-picked spot, 5s 3d. to 7s.; manufacturing, forward, 1s. 11d., c.i.f.; spot, 2s. 6d.

TRAGACANTH.—Ribbon, No. 1. £210 per cwt.; No. 2, £175 to £180.

TURMERIC.—Madras finger, 105s. per cwt. spot; shipment 84s., c.i.f.

Valerian Root.—Indian, spot, 290s., per cwt.; shipment, 270s., c.i.f. Continental root. 550s. spot; shipment 550s., c.i.f.

WAXES. — (Per cwt.). BEES'—Dar-es-Salaam, 480s., shipment, not quoted, Sudanese, no offers. CANDELILLA, spot, 465s.; forward, 460s., landed. CARNAUBA, fatty grey, spot, 270s.; shipment, 265s., c.i.f.; prime yellow spot, 535s.; shipment, 425s., c.i.f.

WITCH HAZEL LEAVES.—Spot supplies cleared; shipment, 5s., c.i.f.

Essential and Expressed Oils

AMBER.—Rectified on the spot, 1s. 6d. per lb.

ANISE.—Chinese, 9s. 4d., spot, shipment, 8s. 11d., c.i.f.

BERGAMOT.—Spot, from 167s. per lb. for 35 per cent.

BIRCH TAR.—Rectified 10s. lb. on the spot.

Bois de Rose.—Brazilian spot, 18s. 6d., per lb.; shipment, nominal.

CINNAMON. — English-distilled, 50s. per oz.; other B.P. oils from 22s. to 130s. per lb. Ceylon leaf, 25s.; Seychelles leaf rectified from 9s., spot.

CITRONELLA.—Ceylon, spot, 4s.; shipment, 3s. 7d. per lb., c.i.f.; Formosan nominally 4s. 6d. in bond and 4s. 10½d., c.i.f. Chinese, 4s. in bond; 4s., c.i.f.

CLOVE.—Madagascar leaf for shipment, 6s. 10½d., c.i.f., spot, 7s., in bond. Rectified, 10s. Distilled bud oil, ENGLISH, B.P., 26s. per lb. for 1-cwt. lots.

COD-LIVER.—B.P. in 45-gall. drums is 12s. per gall. plus 30s. deposit on drum. Veterinary is from 9s. 10d. per gall. 25-stone lots. Delivered terms.

CORIANDER.—From 40s. per lb. spot.

PALMAROSA.—Shipment, 130s. per kilo, c.i.f.; spot 135s.

PENNYROYAL.—Spot, 15s. per lb. duty paid; forward shipment offers at 17s., duty paid.

PETITGRAIN. — Paraguay for shipment, 15s. 3d., c.i.f.; spot, 16s. 3d. per lb.

PIMENTO.—Imported BERRY, 110s.; English distilled, 385s.; LRAF, 24s. per lb.

SAGE.—Spanish, 21s. per lb.; Dalmatian

TRADE MARKS APPLICATIONS ADVERTISED BEFORE REGISTRATION

rade Marks Journal," August 31, No. 4592 or chemical products used in agriculture, orticulture and forestry; manures (natural and rtificial) (1)

SYLVISAN, 888,301, by Thompson & Capper, Ltd., Liverpool, 24.

or artificial sweetening substances and pre-

arations (1)

arations (1)
SAXSL1M, 890,556, by Wellcome Foundation, Ltd., London, N.W.1.
For plates, films, papers and sheet materials, all being sensitised; chemical substances; all or use in photography (1)
MINOX, 891,035, by Minox, G.m.b.H., Giessen-Heuchelheim, Germany.

or non-medicated toilet preparations, being reams for the skin (3)

MAW'S SUPPLE, 818,619, by Maws Pharmacy Supplies, Ltd., New Barnet, Herts.

For cosmetics for use in manicure, none being n liquid form (3)

MISTY-MANICURE, 863,987, by Rayette Beauty Products, Ltd., Slough, Bucks.

For all goods (3)

MAN-POWER, 876,084, by Shulton, Inc., Clifton, New Jersey, U.S.A.

Clitton, New Jersey, U.S.A.
For soaps, perfumes, cosmetics, bubble bath
preparations (non-medicated) for toilet purpuses; hair tonics and hair lotions; lotions
mud tonics, all being non-medicated toilet
preparations for use after shaving (3)

Device with words I DREAM OF JEANNIE,
883 401 by Screen Gems Inc. New York

883,401, by Screen Gems, Inc., New York,

U.S.A.

for non-medicated toilet preparations, mentic preparations and preparations, cosnetic preparations and preparations for hair (3)
BATIST, CONSTIAN, 886,076-77, by
Coriolanus, A.G., Binningen, Switzerland.
For hair preparations (3)

ELIDA ULTRA, 887,057, by Unilever, Ltd.,

Port Sunlight, Ches.
For substances for laundry use, cleaning pre parations, detergents (not for use in industrial or manufacturing processes) and soaps (3)

CHAMPINE, 887,943, by Plymouth Chemicals, Ltd., Clyst Honiton, Exeter, Devon. For preparations and substances for laundry use; cleaning, polishing, scouring and abrasive

reparations; and soaps (3) ENZY, 889,223, by Sterwin, A.G., Zug,

Switzerland.

Switzeriand, Sort perfumes, dentifrices, toilet articles, and assential oils; and non-medicated toilet preparations, cosmetic preparations, depilatory reparations, sachets for use in waving the tair, shampoos and soaps, all being goods in the least (2). el form (3)

SEAGEL, 890,317, TRANSGEL, 890,320, by Beecham Group, Ltd., Brentford, Middlesex. For shampoos for dogs (3)

METTRE, 890,384, by Violet Ann Metcalfe, Darlington.

for non-medicated toilet and cosmetic preparations (3)

MELMANA, 891,839, by Harold Heydon & Co., Ltd., London, E.3.
For perfumes, cosmetics, non-medicated toilet

preparations, soaps, preparations for the teeth nd hair, toilet articles (3)

IMPATIENCE, 892,363, by Lancome, S.A., Paris, France.

Paris, France.

for perfumes, non-medicated toilet preparaions, cosmetic preparations, dentifrices, deillatory preparations, toilet articles, sachets
or use in waving the hair, shampoos, soaps
and essential oils (3)

NEWPOINT, 892,719, by Beecham Group,

Ltd., Brentford, Middlesex.

For medical and surgical plasters and material preparated for bandaging, all incorporating

FRAMYTULLE, 875,838, by Fisons Pharmaceuticals, Ltd., Loughborough, Leics. For babies' disposable napkins made principally of cellulose wadding (5)
PADD1, 877,268, by Robinson & Sons, Ltd.,

Chesterfield, Derbyshire.

NEODECAGEL, 878,822, by Merck & Co., Inc., Rahway, New Jersey, U.S.A.

For sheep dips and preparations for making

GLENDALE, B880,570, by Imperial Chemical Industries, Ltd., London, S.W.1.
or medicated preparations and medicated

plasters and dressings, all for use in the

treatment of corns (5)
PECLAVUS, 882,285, by Spezialchemie,
G.m.b.H. & Co. Arzneimittelfabrik, Munich,

For pharmaceutical and medicinal preparations, disinfectants and sanitary substances (5)
ACTIMIN, 883,696, by Richardson-Merrell,
Inc., New York, U.S.A.

For pharmaceutical preparations and sub-

stances (5)

BTZ, B884,609, by J. R. Geigy, A.G., Basle, Switzerland, DILATON, 885,910, by A. Wander, Ltd., London, W.I. CODO-PAN, ANTAZETS, 891,586-87, by Co-operative Wholesale Society, Ltd., Manchester.

PATENTS

COMPLETE SPECIFICATIONS ACCEPTED "Official Journal (Patents)," September 1

Method of dethod of producing 1-(p-nitrophenyl)-2-amidinourea hydrochloride. Grodziskie Zak-lady Pharmaceutyczne "Polfa." 1,045,170. 3,5-cyclo-6β,19-oxido-steroids. Syntex Corpora-

tion, 1,045,174. Quinazoline derivatives. Parke, Davis & Co.

1,045,180. Process of producing sucrose benzoate. Velsi-

col Chemical Corporation. 1,045,182.

Phosphate esters useful as sensitisers for photographic emulsions. Agfa, A.G. 1,045,183.

Sensitisation of photographic

emulsions. Agfa, A.G. 1,045,184.

Steroid [2,3 -C] furazan compounds and preparation of the same. Daiichi Seiyaku Co., Ltd 1 045 235

W-phthalimidoalkyl ketones and pharmaceuti-cal compositions thereof. John Wyeth & Bro, Ltd. 1,045,244.

Surgical gauze. Espana Industrial, S.A. and J. M. Garcia, 1,045,294.

Sensitive photographic materials. Eastman Kodak Co. 1,045,303.

Continuous sulphonation process. B. Brooks and R. J. Brooks. 1,045,305.

Thioxanthenes. Chas. Pfizer & Co., Inc.

1,043,323.

Photographic camera. Agfa, A.G. 1,045,436.

Device for maintaining a photographic processing solution at a pre-determined composition. Gevaert Photoproducten, N.V. 1.045.450.

Orthopaedic appliances. Unique Balance Co., Ltd., R. H. Maudsley and E. Matthews. 1,045,471.

8β-Methyl-11β-hydroxysteroids and their paration. Shionogi & Co., Ltd. 1,045,474. Steroid 8\beta, 11\beta-carboimidic lactones and their preparation. Shionogi & Co., Ltd. 1,045,475. 8\(\beta\)-substituted-11\(\beta\)-hydroxysteroids and their preparation. Shionogi & Co., Ltd. 1,045,476, Apparatus for photographic developing. S.

Grant. 1,045,496. Closure means for containers. Thermos, Ltd.

1.045.499. Dicyanoethyl fatty diamines. Armour & Co.

Method and apparatus for manufacturing a

collagen article. Johnson & 1,045,561. Johnson.

Photographic materials. Agfa, A.G. 1,045,609. Benzoylacetanilide derivatives and their use in colour photographic materials. Fuji Shashin

Film, K.K. 1,045,633.

Aminosteroid compounds and processes their preparations. Roussel-Uclaf. 1,045,644.

tneir preparations. Rousscl-Uclaf. 1,045,644. Di-alkylaminoalkyl estrone oxime derivatives. Shionogi & Co., Ltd. 1,045,657. Closures for containers and containers embodying such closures. A. W. Reynolds. 1,045,677.

British patent specifications relating to the above will be obtainable (price 4s, 6d. each) from the Patent Office, 23 Southampton Buildings, Chancery Lane, London, W.C.2,

COMING EVENTS

Items for inclusion under this heading should be sent in time to reach the Editor not later than first post on Wednesday of the week of insertion.

Sunday, September 11

ROYAL INSTITUTE OF CHEMISTRY, School of Pharmacy, Royal free hospital medical school, Hunter Street, London, W.C.1. Summer school in spectroscopy. Until Sep-

Monday, September 12

COLCHESTER BRANCH, PHARMACEUTICAL SOCIETY, Fleece hotel, Head Street, Colchester, at 8 p.m. Mr. V. W. Bailie (Gonzalez Byass (U.K.), Ltd.), on "Wine and Cheese.

LUID POWER INTERNATIONAL EXHIBITION, National hall, Olympia, London, W.14. Until September 16.

INDUSTRIAL EQUIPMENT AND SERVICES EXHIBI-City hall, Manchester. Until September 17.

Tuesday, September 13

MEDICINES—WITH CARE EXHIBITION, Public hall, Stafford Road, Wallington, Surrey. Until 17th. Hours: 10 a.m. to 6 p.m.

(Friday 9 p.m.).
WEST RIDING SECTION, OIL AND COLOUR
CHEMISTS' ASSOCIATION, Great Northern hotel, Leeds, at 7.30 p.m. Symposium on dispersion.

Wednesday, September 14

SLOUGH BRANCH, PHARMACEUTICAL SOCIETY, Thomas Wethered & Sons, Ltd., The Brewery, Marlow, at 2.30 p.m. Works visit. SOCIETY FOR ANALYTICAL CHEMISTRY, Loughborough College of Technology, Loughborough, Leics. Particle size analysis conference. Until September 16.
THIN-LAYER CHROMATOGRAPHY GROUP, SOCIETY FOR ANALYTICAL CHEMISTRY, Enfield of Technology, Oueensway. Foffeld SLOUGH BRANCH, PHARMACEUTICAL SOCIETY,

of Technology, Queensway, Enfield College of Technology, Queensway, Enfield, Middlesex, at 2 p.m. Meeting on "Some applications of Thin-layer Chromatography in Pharmacy." Speakers: T. J. Betts (School of Pharmacy, University of London); R. J. M. Ratcliffe (Smith, Kline & French Laboratories, Ltd.) and C. A. Johnson, (Prijtish, Pharmacopories, Commission) son (British Pharmacopoeia Commission).

Thursday, September 15

C. ALBANS BUSINESS AND PROFESSIONAL WOMEN'S CLUB and WEST HERTFORDSHIRE BRANCH, PHARMACEUTICAL SOCIETY, Council Chamber, St. Albans town hall, at 8 p.m. Mrs. E. Leigh (a member of the Society's Council) on 'Safety of Drugs.'' Council) on 'Safety of Drugs.'

Sunday, September 18

International Pharmaceutical Federation Assembly, Madrid, Spain. Until Septem-FEDERATION

LEICESTER PHARMACY CRICKET CLUB, Welling-borough, Northants, at 2.45 p.m. Match against a Wellingborough X1.

Advance Information

NORTH-EAST BRANCHES OF THE PHARMACEUTICAL SOCIETY. Three Tuns hotel, Durham, at 8 Society. Three Tuns hotel, Durham, at 8 p.m. Eighth annual regional conference. Messrs. W. T. Rees (chairman, National Pharmaceutical Union) and C. C. Stevens (a member of the Pharmaceutical Society's Council), "thinking aloud" on "Distribution of Pharmacies" and "Advertising." September 29 ber, 28.

Courses and Conferences

INDUSTRIAL SOCIETY, Cafe Royal, Regent Street, London, W.1. One-day conference on recommended standards for employee amenities. September 22. Details from the Society's administrative officer, 48 Bryanston Square, London, W.1.

NATIONAL COUNCIL FOR QUALITY AND RELIA-BILITY, Winter Gardens, Blackpool, Lancs. National conference "Profiting by Quality and Reliability." November 8-10. Details from the secretary, Vintry House, Queen Street-place, London, E.C.4.

Prescribers

What doctors are reading about developments in drugs and treatments

DURING the outbreak of typhoid fever in Aberdeen in 1964 workers at the City Hospital carried out a double blind trial to test the efficiency of ampicillin in preventing the carrier state. With a possible total of 500 or more cases, about 160 temporary and sixteen chronic carriers might have been expected, and the trial was therefore conducted in early convalescent excretors, 114 in number. The dose of ampicillin was 4gm. daily for adults for ten days. Of eighty-five patients who completed the trial, ten of fortyfive on ampicillin, and eighteen of forty patients on inert capsules, afterwards excreted Salmonella typhi, the difference being of only bordering significance. If six clinical relapses were counted as "failures" the ampicillin treatment appeared somewhat more favourable, but the authors say that further trials are needed to establish its value. Fiftytwo persistent excreters completed three months' treatment with 3 gm. of ampicillin daily and of those three have become chronic carriers. The authors believe that although ampicillin is not always effective, its use may have contributed to the low incidence of chronic carriers in the epidemic (five out of 469 confirmed cases). It is suggested that more prolonged and higher doses may be required to clear bacteria from the tissues of carriers (persistent infection is believed to reside intracellularly), or that the drug may not be generally effective against the form of bacterium which persists in chronic carriers. (B.M.J., September 3, p. 555.)

LOMOTIL has no significant advantage over codeine phosphate, concludes a worker at Sheffield Royal Infirmary following a controlled trial in twentythree patients with post-vagotomy diarrhoea. Although the product proved to be a satisfactory constipating agent,

it was judged to be of little value in either prophylaxis of sudden episodic attacks or the treatment of more continuous post-vagotomy diarrhoea. Side effects were noted in five of the patients. (B.M.J., September 3, p. 560.)
"MISLEADING information" about

netronidazole (Flagyl) is included in the British National Formulary, 1966, say correspondents from St. Thomas's Hospital, London, and May & Baker, I. The description of the drug on 350 as a "a vaginal fungicide" is claimed away on the grounds that no useful antifungal action has ever been demonstrated. And the statement on p. 74 that two courses of seven days, with an interval of two weeks, is the usual treatment for trichomonas infection is criticised because, in the opinion of the writers, most patients requiring a second course have been infected by their untreated male sex contacts. (B.M.J., September 3, p. 589.)

THE British National Formulary warning that "the barbiturates sometimes produce transient disorientation which is particularly distressing to the elderly patient" is quoted in a report from Southern General Hospital, Glasgow. The author says that the effect is not fully realised because it is common to find, when elderly patients are visited in their own homes, that barbiturates have been prescribed. She presents a selection of recent cases to show the extent of the problem "in terms of human misery and unnecessary demand on hospital accommoda-tion" and says that when an elderly patient requires a sedative or hypnotic, simple measures such as a dry bed or clothing or a warm drink may be sufficient. Chlorpromazine, promazine, thioridazine, dichloralphenazone and triclofos are useful if drugs are neces-

sary (*Practitioner*, September, p. 345).

The following comments on drugs appear in Drug and Therapeutics Bul-letin: Tybamate (Benvil, Solacen). Cannot be recommended as a drug of first choice in the control of anxiety. It may possibly be useful in some cases which have failed to respond to other established remedies. (D.&T.B., September

WILLS

MR. J. L. GOULDER, M.P.S., 31 Eldorado Road, Cheltenham, Glos, managing director of United Chemists' Association, Ltd., Cheltenham, left £48,223 (£46,111 net).

MR. H. J. GREEN, M.P.S., 117 Broadway, Frome, Somerset, left £13,395 (£13,318 net).

MR. W. GREENHALGH, Woodstock, Lyme Park, Chinley, Derbyshire, late joint managing director of Edward Taylor, Ltd., Monton, Eccles Manchester left £49,832 (£48,705 net).

director of Edward Taylor, Ltd., Monton, Eccles, Manchester, left £49,832 (48,705 net), MR. F. G. HAWORTH, Casita, Beaumaris, Anglesey, former chairman and joint manageing director of Edward Taylor, Ltd., Monton,

Eccles, Manchester, left £18,348 (£17,396 net).
MISS ISABELLA S. HAY, M.P.S., 4 Budle
Street, Newcastle upon Tyne, left £6,269

Street, 1800 act. (£6,170 net).

MR. L. R. HAYNE, M.P.S., 81 Overhill, Southwick, Sussex, left £11,665 (£11,183 net).

MR. F. E. HERINGTON, M.P.S., 43 Downs. P.S., 42 Downs. Road, Dunstable, Beds, left £15,606 (£148,327

Mr. W. Hornsby, M.P.S., 19 Richmond Terrace, Whitley B £2,155 (£2,100 net). Whitley Bay, Northumberland, left

MR. H. J. KIRK, M.P.S., 104 Erithway oad, Finham, Coventry, Warwicks, left

£4,179 (£3,602 net).

MR. K. H. B. LEE, M.P.S., Highfields,
Toothill Lane, Rastrick, Yorks, left £27,024 (£26,895 net).

MR. E. S. LESTER, M.P.S., 106 Scholes Park Road, Scarborough, Yorks, left £3,535 (£3,410 net).

MR. W. Lusby, M.P.S., 31 Railway Street, Beverley, Yorks, left £4,448 (£4,003 net).
MR. E. MACMANUS, M.P.S.I., Clara Villa,

177 Rathgar Road, Rathgar, Dublin, left estate in England and the Republic of Ireland valued at £27,082.

MR. J. B. MORRIS, M.P.S., Hillcrest, Liverpool Road, Ashton-in-Makerfield, Lancs, left £20,047 (£15,749 net))

MR. J. T. T. ROLFE, M.P.S., 9 Briton Road, Faversham, Kent, left £28,021 (£27,730 net). MR. K. W. SHARLAND, M.P.S., 68 West Valley Road, Hemel Hempstead, Herts, left

£9,424 (£9,356 net).

MISS MARGARET SIMPSON, M.P.S., 5 Rosegarth Avenue, Aston, Sheffield, left £2,526

gartin Avenue, (£2,463 net).

MR. A. WALLISS, M.P.S., 69 Boroughbridge Road, Acomb, York, left £2,658

MR. W. K. WINFIELD, M.P.S., 393 Streets-brook Road, Solihull, Warwickshire, left £53,412 (£52,328 net). MR. S. WINROOPE, M.P.S., 37 Westland Road, Kirk Ella, Hull, Yorks, left £9,848

(£4,985 net).

MR. T. YOXALL, M.P.S., 151 Neale Avenue, Kettering, Northants, left £1,003 (£944 net).

COMMERCIAL TELEVISION

The information given in the table is of number of appearances and total screen time in seconds. Thus 7/105 means that the advertiser's announcement will, during the week covered, be screened seven times and for a total of 105 seconds.

Period September 18 — 24 PRODUCT	London	Midland	North	Scotland	Wales & West	South	North-east	Anglia	Ulster	Westward	Border	Grampian	Eireann	Channel Is.
Alka Seltzer	5/200 2/60 2/60 2/60 2/90 — 1/30 — 2/60 — 2/60 — 1/45 1/15	5/200 3/90 4/120 — 2/60 2/90 — 1/30 — 1/15 — 4/120 — 2/90	5/200 2/60 2/60 1/45 1/30 4/120 1/45 1/15	5/200 5/104 3/90 7/49 — 2/60 2/90 2/30 — 1/45 3/45 — 3/90 3/90 2/52	8/300 2/60 — 3/21 2/60 2/90 — — 1/15 3/90 3/97 1/15	5/200 2/60 — — 2/60 2/90 — — — 2/30 4/30 2/90 — 2/90 1/15	8/300 4/120 3/90 — 2/60 2/90 — 1/45 2/30 — 3/90 — 2/52 1/15	5/200 2/60 — — 2/60 1/45 — — 2/30 — 2/60 2/52 1/15	5/200 2/60 — — 2/60 2/90 — — 2/30 — 3/90 — 1/7	5/200 1/30 — — — 2/60 2/90 — — 2/30 — 2/60 — 2/42 1/15	5/200 3/90 — 3/21 — 2/60 2/90 — 1/15 — 2/60 — 2/52 1/15	5/200 2/60 1/30 2/14 	5/200	5/200